UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

ALFONSO CIOFFI, an individual, MELANIE ROZMAN, an individual, MEGAN ROZMAN, an individual, and MORGAN ROZMAN, an individual

Plaintiffs,

vs.

GOOGLE, INC.,

Defendant.

Case No. 2:13-cv-103 (JRG/RSP)

PLAINTIFFS' ALFONSO CIOFFI, MELANIE ROZMAN, MEGAN ROZMAN AND MORGAN ROZMAN POST-TRIAL PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW REGARDING 35 U.S.C. § 251

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FINDINGS OF FACT

I. INTRODUCTION

A. The Parties.

Plaintiffs

1. The Plaintiffs are Alfonso Cioffi, co-inventor on the Asserted Patents, and Melanie Rozman, Morgan Rozman and Megan Rozman, the daughters of the deceased co-inventor, Allen Rozman ("Plaintiffs"). Each Plaintiff is a Texas state resident.

Defendant

2. The Defendant is Google, Inc., a Delaware corporation with its headquarters at 1600 Amphitheatre Pkwy, Mountain View, CA 94043.

B. Nature of the Action.

3. The Plaintiffs accused Google of infringing U.S. Reissue Patent Nos. RE43,500 ("the '500 Patent"), RE43,528 ("the '528 Patent"), and RE43,529 ("the '529 Patent") (collectively, "the Asserted Patents"). Each asserted patent is titled "System and Method for Protecting a Computer System from Malicious Software" and is a reissue derived from U.S. Patent No. 7,494,247 ("the original patent" or "the '247 Patent"). (PTX-001; PTX-002; PTX-003; and PTX-004).

4. A jury trial was commenced on February 6, 2017. During trial Google introduced expert testimony relating to the invalidity defenses of improper recapture and the original patent rule, both under 35 U.S.C. § 251. Plaintiffs responded to Google's evidence with rebuttal testimony from Plaintiffs' experts. Both Parties cross examined the other Party's expert witnesses on recapture and original patent rule. Neither Party used the full 12 hours each was allotted to present its case to the jury. (ECF No. 319 at 10).

5. On February 10, 2017, the jury returned a unanimous verdict, (ECF No. 259), finding that the asserted claims were infringed and not invalid. (*Id.*) Specifically, as to invalidity, the jury found that Google did not prove, by clear and convincing evidence: (1) the invalidity of Claim 67 of the '528 Patent as anticipated, as violating the rule against recapture, or as violating the original patent requirement; (2) the invalidity of Claim 43 of the '500 Patent as obvious, as violating the rule against recapture, or as violating the original patent requirement; (3) the invalidity of Claim 5 of the '528 Patent as obvious, or as violating the original patent requirement; or (4) the invalidity of Claim 49 of the '529 Patent as obvious, or as violating the original patent requirement. (*Id.*)

6. At the close of evidence, Google moved for judgment as a matter of law under Fed. R. Civ. P. 50(a) which was denied. (ECF No. 251) After the trial, Google renewed its motion for judgment as a matter of law under Fed. R. Civ. P 50(b) or alternatively for a new trial pursuant to Fed. R. Civ. P. 59. (ECF No. 292) On September 15, 2017, the Court entered Final Judgment in accordance with the jury's verdict. (ECF No. 308)

7. In response to Google's Motion for Post-Trial Relief on Invalidity under 35 U.S.C. §§ 102, 103, and 251 (ECF No. 292), the Court granted-in-part Google's motion for a new trial by agreeing to adjudicate before the bench the issues of § 251 invalidity. (ECF No. 319)

C. The Parties' Contentions.

8. Google contends that all the asserted claims are invalid for violating the requirements of the original patent requirement of reissue statute, 35 U.S.C. § 251. At trial, Google argued to the jury and through its JMOL briefing that:

- All the asserted claims are invalid under the original patent rule for recitation of two "web browser processes;"
- Claims 43 and 67 are invalid under the original patent rule for recitation of a "single processor embodiment;"

- Claims 43, 49 and 67 are invalid under the original patent rule for recitation of a "first web browser process passing to or exchanging website data with a second web browser process;"[1]

- Claim 49 is invalid under the original patent rule for recitation of a "first web browser process initializing a second web browser process."[2]

9. Google further contends that claim 67 of the '528 patent and claim 43 of the '500 patent are invalid for violating the rule against recapture, 35 U.S.C. § 251.

10. Plaintiffs contend none of the asserted claims of the patents-in-suit are invalid for failing to comply with 35 U.S.C. § 251.

D. The Parties' Witnesses.

11. Relevant to the §251 issues before the Court, at trial, the Court heard testimony from the following witnesses:

12. Aviel Rubin, Ph.D. was called by Plaintiffs and is a computer science professor at Johns Hopkins and the Technical Director of the Information Security Institute at Johns Hopkins. Dr. Rubin offered testimony on the technical nature of asserted claims, infringement by Google, and the relative technical value of Plaintiffs' invention compared to the features in Google Chrome's web browser.

13. Hubert Dunsmore, Ph.D. was called by Plaintiffs and is a computer science professor at Purdue University. Professor Dunsmore offered rebuttal testimony on the validity of

[1] Google admits it failed to present any evidence at trial on the question of whether a POSITA would interpret the specification as clearly disclosing a "first web browser process passing to or exchanging website data with a second web browser process" in support of its original patent rule defense, and instead argued the issue for the first time in its JMOL. (ECF 320 at 3.)

[2] Google similarly admits it failed to present any evidence at trial on the question of whether a POSITA would interpret the specification as clearly disclosing a "first web browser process initializing a second web browser process" in support of its original patent rule defense, and argued the issue for the first time in its JMOL. (ECF 320 at 3-4.)

the Asserted Patents, and specifically addressed Google's assertions of invalidity under 35 U.S.C. § 251. The Court found Professor Dunsmore qualified to testify on the subject matter (TT 105:22-109:10, 2/9/17 a.m.) and found his testimony related to recapture and original patent rule to be credible, persuasive and supported by facts. (TT (ECF No. 271) 4:19-15:22)

14. Plaintiffs also called Mr. Cioffi to testify on prosecution of the reexam patents, and the narrowing of the reissue claims relative to the original patent claims.

15. Googled called Dr. William Arbaugh, Ph.D. who is a retired professor of computer science at the University of Maryland. Dr. Arbaugh testified on invalidity of the Asserted Patents based on anticipation and obviousness. Some of Dr. Arbaugh's opinions regarding obviousness are relevant to Google's section 251 defenses. *See infra*, Findings of Facts Sections ("FF") 34, 41, 47, 117, 129.

16. Dr. Michael Kogan is a computer consultant with a Ph.D. in computer science. (TT (ECF No. 268) 131:23-134:6) Dr. Kogan testified on the issues of non-infringement and invalidity under Section § 251 – recapture and the original patent rule.

II. DISCUSSION

A. FACTS RELATED TO GOOGLE'S "ORIGINAL PATENT" DEFENSE.

1. The Specification Discloses A "First Web Browser Process."

Google contends there is no clear disclosure in the specification of a first "web browser process" defined by the Court's claim construction as a "first process capable of accessing website data."

Plaintiffs' Position:

17. It is Google's burden to show by clear and convincing evidence that a person of ordinary skill in the art ("POSITA") reading the specification would NOT identify "a ***first*** process that can access data on websites" as "clearly and unequivocally disclosed."

18. Google admits that the specification for the original '247 Patent discloses "first" and "second" "logical processes," but argues that the specification only discloses a second logical process capable of accessing website data, but not a first logical process capable of such. (ECF No. 292 at 19) According to Google, there is no disclosure of a first process that can access data on websites (a.k.a., a first "web browser process").

19. Plaintiffs contend the specification adequately discloses a "first web browser process" for purposes of satisfying the original patent rule, and Google has failed to meet its burden of clear and convincing evidence to prove otherwise.

20. The following facts support Plaintiffs' position that the specification discloses a "first web browser process" for purposes of satisfying the original patent rule:

21. All of the asserted claims contain the limitations a "first web browser process" and a "second web browser process."

22. The Court has construed the term "web browser process" to mean a "***process that can access data on websites***." ECF No. 71 at 15.

23. The Federal Circuit further modified this definition noting a "web browser process" alone does not have a "direct" access capability requirement. *Cioffi, et al. v. Google*, Inc. 632 Fed. Appx. 1013, 1021-22 (Fed. Cir. 2015); *see also* Joint Pre-Trial Order (ECF No. 200), § V.D. (Stipulated Claim Construction). Stated differently, a "web browser process" can directly or indirectly access data on websites.

24. The specification discloses the use of "logical processes." (PTX – 001, Col. 16:34-43)

25. The specification identifies a number of functions carried out by these logical processes including: "executing instructions" (PTX – 001, Col. 7:64-65, 8:2-3), "accessing data

contained in a first memory space and a second memory space" (PTX – 001, Col. 7:65-67), "exchanging data across a network of one or more computers" (PTX – 001, Col. 8:5-6), providing data for display (PTX – 001, Col. 8:8-10), "a malware program" executing as part of a logical process (PTX – 001, Col. 8:15-17), "executing instructions necessary to carry out the functions of an operating system" (PTX – 001, Col. 16:25-27), "executing instructions necessary to carry out a first computer program, including but not limited to a word processor" (PTX – 001, Col. 16:27-30), "executing instructions necessary to carry out the functions of a web browser program" (PTX – 001, Col. 16:30-32), "executing instructions necessary to carry out the functions of an instant messenger program, for example" (PTX – 001, Col. 16:32-34).

26. Importantly, the specification also notes that "the functions carried out by processors 920 and 940 may comprise separate, secure logical processes executing on the same physical processor." (PTX – 001, Col. 16:22-24). The specification teaches that "[a] computer system 100 constructed in accordance with the principles of the present invention would be capable of disallowing a secure logical process, such as the second logical process described above, access to certain memory spaces, and/or disallowing a secure logical process from initiating access to another logical process." (PTX – 001, Col. 16:34-39). The specification continues: "[f]or example, the functions carried out by P2 140 (FIG. 1) may comprise a secure logical process, which may be configured to be unable to automatically initiate access to either M1 110 or another logical process performing the functions of P1 120." (PTX – 001, Col. 16:39-43).

27. At trial, the Court found Professor Dunsmore's testimony on this subject matter to be credible and persuasive. In particular, when asked about the types of programs that would be included as "secure logical processes," Professor Dunsmore explained that column 16 of the

specification discloses to a POSITA "that there could be a -- a number of things that could be done by these processes. And among those would be processes that are -- processes that are part of a web browser. So the specification specifically talks about a -- a web browser program and processes that work with that." (TT (ECF No. 271) 6:24-9:1)

28. Professor Dunsmore added that: "[i]n the original patent, a logical process could be just about anything. It could be a process that was running, working with a gaming system. It could be a process that's running working with email. It could be a process working with web browsers." (TT (ECF No. 271) 12:16-13:2).

29. All of the asserted claims were narrowed in reissue from "logical processes" to "web browser processes." (TT (ECF No. 263) 165:19-166:13). As testified to by Professor Dunsmore, a POSITA would understand "logical processes" to be just about any process, but that in reissue, Mr. Rozman and Mr. Cioffi narrowed to "web browser processes" which are one of many possible types of "logical processes." (TT (ECF No. 271) 12:8-13:2).

30. Furthermore, column 14 of the specification discloses an embodiment of Plaintiffs' invention that uses "Interactive network process" that meet the Court's definition of "web browser process" used in the claims. (PTX – 001, Col. 14:3-62). The term "interactive network process" on its face includes a web browser process, as a web browser process by the Court's definition is a process that interacts with the network. The specification identifies an "interactive gaming process" as **one example** of an "interactive network process" (PTX – 001, Col. 14:3-5, 14:30-31) but nowhere limits an "interactive network process" to just gaming.

31. The specification describes receiving "interactive network process status data" from the network and passing the status data to P1 120. (PTX – 001, Col. 14:33-38). This discloses the "logical process" executing on P1 as receiving network status data and therefore

meets the Court's definition of a "web browser process" (a process that can access data on websites).

32. Professor Dunsmore testified credibly and persuasively that column 14 discloses to a POSITA the use of a first and second web browser process. (TT (ECF No. 271) 10:3-21). As Professor Dunsmore explained "[h]ere we have two processes, P1 and P2. And both of them are retrieving data from the network, and that's exactly what needs to be done by the processes of a web browser." *Id*.

33. Google concedes that "web browser processes" are a narrower sub-species of "logical processes" described throughout the specification. (ECF No. 292 at 11 ("by broadly reciting 'logical processes,' the originally filed '247 Patent claims indisputably encompassed web browser processes, including a first web browser process") and 12 ("[c]hanging the originally filed claims of the '247 Patent to recite a 'first web browser process' requires revising only one term, 'first logical process,' to a 'first web browser process.' This change is minor given that a 'web browser process' is a type of 'logical process.'")); (TT ECF No. 268) 67:21-68:4)

34. Google's invalidity expert, Dr. Arbaugh, called the "first logical process" the "same as the first web browser process." (TT (ECF No. 268) 67:21-68:4)

35. Furthermore, Figure 1, discloses that the processes running on P1 and P2 both have access to the network interface and network. Figure 1 discloses a two-way communication arrow from P1 120 to the network interface 190 (Item 191) that connects to the network. (PTX – 001, Fig. 1) Similarly, Figure 1 discloses a two-way communication arrow between P2 140 and the network interface 190. *Id*.

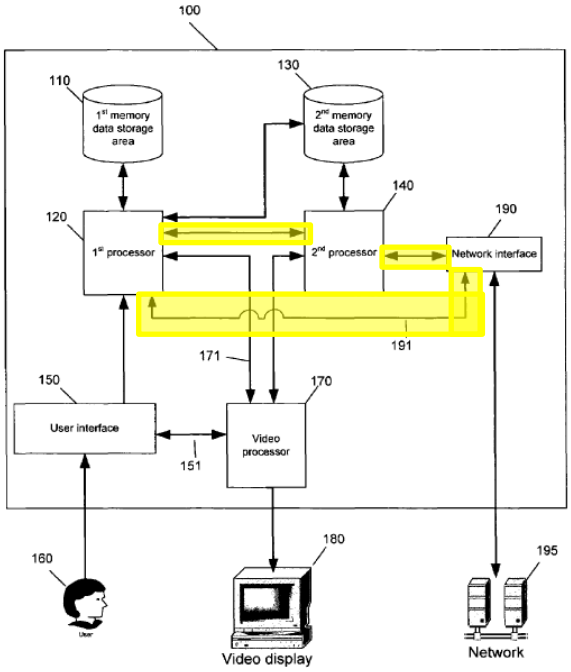
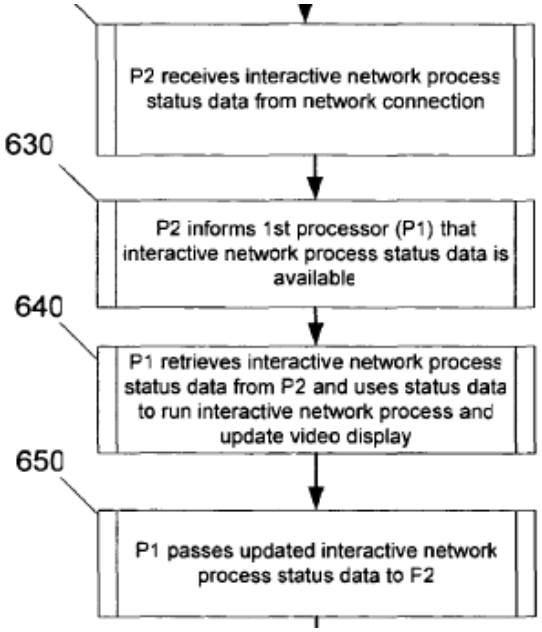


Fig. 1

36. Figure 6 discloses passing of network data from second process to the first process. (PTX – 001, Fig. 6). As described in column 14, the communication arrows of Figure 6 disclose the exchanging of "interactive network status data" between the two processes. (PTX – 001, Fig. 6, Col. 14:33-40)



Response to Google's Position:

37. Google makes several arguments in support of its contention that the specification fails to disclose a first web browser process (or a ***first*** process accessing website data). Google admits that the specification discloses first and second logical processes, but argues that the specification only suggests the second process can be a web browser process. (ECF No. 292 at 19) To counter the "interactive network process" embodiment described in column 14, Google argues (i) this embodiment only refers to physical processors, and not logical processes, and (ii) that "interactive network data," is not necessarily "website data." (*Id.* at 19-20) Finally, Google argues the discussion of Figure 1 in the specification does not disclose a first process on P1 120 communicating with the network. (*Id.* at 20) None of Google's arguments are persuasive.

38. As discussed above, the balance of the evidence admitted at trial supports finding a clear disclosure of a "first web browser process."

39. Mr. Cioffi further testified that the specification disclosed "logical processes" and "interactive network processes" that included "web browser processes within their definition." (TT (ECF No. 263) 122:15-124:19); (PTX-001, Col. 6:16-18 (describing interactive applications as "gaming, messaging, and browsing.")).

40. Google concedes that "web browser processes" are a narrower sub-species of "logical processes" described throughout the specification. (ECF No. 292 at 11 ("by broadly reciting 'logical processes,' the originally filed '247 Patent claims indisputably encompassed web browser processes, including a first web browser process") and 12 ("[c]hanging the originally filed claims of the '247 Patent to recite a 'first web browser process' requires revising only one term, 'first logical process,' to a 'first web browser process.' This change is minor

given that a 'web browser process' is a type of 'logical process.'")); (TT (ECF No. 268) 67:21-68:4)

41. Google's invalidity expert, Dr. Arbaugh, called the "first logical process" the "same as the first web browser process." (TT ECF No. 268) 67:21-68:4)

42. Professor Dunsmore opined that a logical process could be just about any process, including a "process working with web browsers." (TT (ECF No. 271) 12:16-24)

43. Professor Dunsmore explained that column 14, lines 28 through 45 of the '247 Patent specification plainly discloses use of a first and second web browser process. (TT (ECF No. 271) 9:21-10:21)

44. In particular, column 14 discloses an "interactive network process" that by its plain words contemplates a process interacting with the network. P1 and P2 exchange the interactive network status data from the network connection, and updated interactive network status is sent back to the network. (PTX – 001, Col. 14:28-45)

45. Professor Dunsmore explained that a POSITA reviewing column 14 would understand that P1 and P2 can refer to two processes, both of which are accessing data from the Internet, and thus meet the Court's definition of "web browser process" (a process that can access data on websites). (TT (ECF No. 271) 9:21-10:21)

46. Professor Dunsmore also explained that column 16 discloses to a POSITA the various types of processes that could be executed in a secure logical process, including the "functions of a web browser program." (TT (ECF No. 271) 7:14-8:9) ("Q. Professor Dunsmore, how would a person of ordinary skill understand or interpret these disclosures that we've just looked at in column 16? A. Well, a person of ordinary skill would realize that there could be a –

a number of things that could be done by these process. And among those would be processes that are -- processes that are part of a web browser.”))

47. Dr. Arbaugh called a “logical process” and “web browser process” essentially the same thing. (TT (ECF No. 268) 67:21-68:4)

48. Professor Dunsmore explained that Figure 6 discloses using two processes capable of accessing website data (e.g. “web browser processes”) to carry-out the inventors’ “interactive network process” embodiment. (TT (ECF No. 271) 9:21-10:21)

49. Google’s argument that discussion of P1 and P2 in column 14 must be limited to physical processors, and not “processes,” is unpersuasive and contradicted the clear language of the specification as a whole.

50. The co-inventor, Mr. Cioffi, explained that all the figures specifically refer to P1 and P2 as physical processors, but they also by definition refer to the first logical process on P1 and the second logical process on P2. (TT (ECF No. 263) 135:7-136:15)

51. The Summary of the Invention never refers to physical processors, but instead repeatedly notes that an “object of the present invention” is to provide a computer system capable of executing instructions in a “first logical process” and “second logical process,” and that malware “downloaded from the network and executing as part of the second logical process is incapable of initiating access to the “first memory space.” (PTX-001, Col. 7:63-8:19) This is described in column 16, which makes clear that the functions carried out by the processors “may comprise separate, secure logical processes.” (*Id.*, Col. 16:23-24)

52. The inventors specifically note that the functions of P1 120 in Figure 1 may be carried out by a first logical process, and the functions of P2 140 may be carried out by a second logical process:

> [a] computer system 100 constructed in accordance with the principles of the present invention would be capable of disallowing a secure logical process, such as the second logical process described above, access to certain memory spaces, and/or disallowing a secure logical process from initiating access to another logical process. For example, the functions carried out by P2 140 (FIG. 1) may comprise a secure logical process, which may be configured to be unable to automatically initiate access to either M1 110 or another logical process performing the functions of P1 120.

(*Id*., Col. 16:34-43)

53. Google admits that P1 and P2 described in column 14 refer back to elements 120 and 140 of Figure 1. (ECF No. 292 at 19 (arguing "both P1 and P2 refer back to elements 120 and 140 in Figure 1" in the discussion of Figure 6 in column 14))

54. Dr. Kogan agreed that computer system 100 referred to in the discussion of Figure 6 ties back to Figure 1 and the two processors, P1 and P2. (TT (ECF No. 268) 145:8-10)

55. Professor Dunsmore testified that Figure 6 and column 14 disclose a first and second web browser process. (TT (ECF No. 271) 9:21-10:21) Professor Dunsmore opined that a POSITA would understand Figure 6 and column 14 as disclosing two processes executing on two processors, both accessing data from the network, and therefore, disclosing a first and second web browser process. (*Id.* at 9:21-10:21)

56. In sum, Google's first argument that discussion of P1 and P2 in column 14 must be limited to physical processors, and not "processes," is unpersuasive.

57. Google's second argument that the specification's "interactive network process" embodiment is limited to online gaming is similarly unpersuasive.

58. Google's expert, Dr. Kogan, opined that the "interactive network process" embodiment of Figure 6, discussed in column 14, is limited to "online gaming" and does not involve accessing website data. (TT (ECF No. 268)145:5-146:4) The processes accessing "interactive network process status data" from the network are not accessing "website data" and cannot fit the Court's definition of "web browser process." (*Id*.) Dr. Kogan's argument,

however, rests on an improperly narrowed interpretation of Figure 6's embodiment, which is instead described as an "interactive network process" that ***may be used***, for example, for "online gaming."

59. The specification notes in several places that "online gaming" is just an example of an interactive network process. (PTX-001, Col. 14:3, 30-31)

60. The inventors expressly did not limit "interactive network process" to online gaming, and instead stated that online gaming was but one example of an interactive network process. (PTX – 001, Col. 14:3, 14:30-31, ("Interactive network processes ***such as*** interactive gaming"); ("an interactive network process, ***such as*** online gaming"))

61. Figure 6 refers to the broader "interactive network process" and denotes "interactive network process status data" being received from the network connection (step 620), the first process on P1 receiving the "interactive network process status data" from P2 (step 640), and that the "updated interactive network process status data" is passed back to the network via the network connection (step 660). (PTX-001, Figure 6)

62. Figure 6 never mentions online gaming, but instead refers more broadly to an "interactive network process." (PTX001, Fig. 6)

63. The specification also makes clear that online gaming is just one example of an "interactive network process" described in Figure 6. (*Id.*, Col. 14:3-4, 14:28-30)

64. Professor Dunsmore testified that a POSITA would interpret an "interactive network process status data" to encompass "website data." (TT (ECF No. 271) 9:21-10:21)

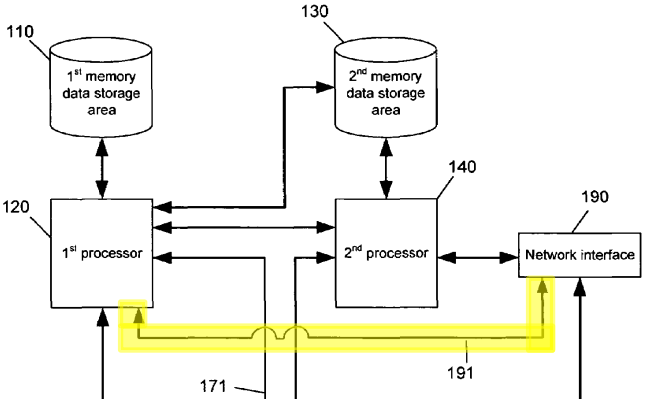
65. Dr. Kogan's supposition that online gaming is limited to receiving data from game servers as opposed to website data from web servers is unsupported. Many online games

are played using web browsers—as when Mr. Cioffi's son crashed the family computer while playing an online game through Internet Explorer. (TT (ECF No. 163) 132:5-11)

66. Mr. Cioffi testified that the original invention was conceived in 2004 from a severe malware attack that arose from his son's use of Internet Explorer ("IE") to play games on the Internet, and thus was always directed in part to web browsers. (TT (ECF No. 263) 132:5-11)

67. Google's third argument that Figure 1 and Item 191 do not disclose a first process capable of accessing the network is similarly unpersuasive.

68. Figure 1 discloses a first process P1 120 with direct access to the network interface via item 191:



PTX-001, Figure 1 (highlighting added).

69. Mr. Cioffi gave unrebutted testimony that "Item 191 is a communication line from the first processor to the network interface device," and discloses that a "first process and the first processor also have access to the network interface device and the network." (TT (ECF No. 263) 97:18-23)

70. The Court considered Item 191 in its original Claim Construction Order. The Court found the disclosure "probative" in overruling Google's invalidity challenge that having a first web browser process with access to the network was contrary to the specification. (ECF No. 71 at 41-48)

Findings of Fact Related to Google's "First Web Browser Process" Argument:

71. In light of the foregoing, the Court finds the following:

- Google had the opportunity but failed to offer evidence at trial on the question of whether a POSITA would recognize that a "first web browser process" is disclosed in the specification;
- The specification discloses throughout the use of "logical processes";
- "Logical processes" can be any number of computer program processes including "web browser processes";
- The specification discloses that "web browser processes" can be one type of "logical process";
- The specification discloses a ***first*** process accessing website data and therefore discloses a "first web browser process" according to the Court's claim construction;
- The specification discloses "interactive network processes";
- Both first process (P1 120) and second process (P2 140) in the "interactive network process" embodiment described in column 14 of the specification have access to "interactive network status data" and exchange that data between the two processes;
- "Interactive network processes" on its face would include "web browser processes" and is understood by a POSITA to include "web browser processes";
- Figure 1 discloses a first process (P1 120) and second process (P2 140) with two-way communication with the network interface;
- Column 14 of the specification discloses a first process (P1 120) and second process (P2 140) with the ability to exchange network data, as does Figure 1 which discloses a two-way communication arrow between first process (P1 120) and second process (P2 140).

2. The Specification Discloses Use of a "Single Processor" Embodiment.

72. Google contends that claim 43 of the '500 patent and claim 67 of the '528 patent violate the original patent rule for claiming execution of the invention on a "single processor."

Plaintiffs' Position

73. The '247 Patent specification clearly discloses a single electronic data processor embodiment.

74. The '247 specification is clear that the invention can be carried out using two logical processes on a "single processor." In column 16, the specification states:

> *[T]he functions carried out by processors 920 and 940 may comprise separate, secure logical processes* ***executing on the same physical processor****.*" (PTX-001, Col. 16:22-24) (emphasis added).

75. The specification continues immediately thereafter with an "example" of an embodiment of the invention carried out using two logical processes, instead of processors. (PTX – 001, Col. 16:24-34).

76. Professor Dunsmore testified at trial that this specific disclosure makes clear to a POSITA that the invention could be executed on a single processor. (TT (ECF No. 271) 6:24-7:11, 8:2-15)

77. He also explained that the specification's teaching that "[p]rocessor 960 may further comprise multiple processor cores" signals to a POSITA that the invention may be executed on multiple processor cores, but could also be executed on a single processor. (TT (ECF No. 271) at 6:10-23; PTX-001, Col. 16:8-12)

78. Finally, the original claim 1 of the '247 Patent application specifically claimed use of a single processor:

WHAT IS CLAIMED IS:

1. A method of operating a computer system, comprising the steps of:

executing instructions in a first logical process, wherein the first logical process is capable of accessing data contained in a first memory space and a second memory space;

executing instructions in a second logical process, wherein the second logical process is capable of accessing data contained in the second memory space, the second logical process being further capable of exchanging data across a network of one or more computers;

displaying, in a windowed format on a display terminal, data from the first logical process and the second logical process, wherein a video processor is adapted to combine data from the first and second logical processes and transmit the combined data to the display terminal;

wherein the computer system is configured such that a malware program downloaded from the network and executing as part of the second logical process is incapable of initiating access to the first memory space.

(PTX-007 at R000005870). The originally applied for claim 1 of the '247 Patent was amended in prosecution (PTX-007 at R00000672-677) to add a second processor limitation that was included in the final issued claims of the '247 Patent.

Response to Google's Position:

79. Google did not offer any competent expert testimony on the question whether a POSITA would find a single processor embodiment disclosed in the specification.

80. Google's expert, Dr. Kogan, briefly touched on the issue but only offered the conclusory statement that the single processor claims (claim 43 of the '500 patent and claim 67 of the '528 patent) are not supported by the specification:

> Q. And finally, have you heard of something called the original patent rule?
>
> A. Yes, I have.
>
> Q. And have you reached any conclusions regarding that rule?
>
> A. Yes, I have. The original patent rule, as a result of it, the – the patents that the claims with one single processor are not supported

> by the specification, and, therefore, by the original patent rule, they are invalid. Trust me, the original patent rule is big and ugly, and I can't remember all the legal standards specifically, but it speaks to if the specification doesn't call out exactly what's being asked for, you can't have it. And so the original patent rule is – renders the two claims with a single processor invalid….

(TT (ECF No. 268) 150:15-151:6)

81. Dr. Kogan does not cite to any portion of the intrinsic record to support his conclusory opinion. He completely failed to rebut Professor Dunsmore's testimony that column 16, lines 22-24, expressly and plainly disclose a single processor embodiment. Nor was Dr. Kogan able to explain the standard he applied for his analysis. To the extent he applied the standard "if the specification doesn't call out exactly what's being asked for, you can't have it" then Dr. Kogan's conclusory opinion should be given even less weight for applying the improper standard.[3]

82. Google's remaining arguments are based on its counsel's interpretation of the specification. First, Google points to Figure 9 and the language in the specification that processor (960) "may further comprise multiple processor cores illustrated by 1st processor 920 and 2nd processor 940." (ECF No. 292 at 21) Google concludes Figure 9 depicts two processors and therefore there is no single processor embodiment. Google's attorney argument, however, ignores the language later in column 16 that clearly states the two logical processes can be executed on a single processor. (PTX-001, Col. 16:22-24) Professor Dunsmore testified

[3]The factual question to be answered by Dr. Kogan was whether the challenged claims "find support in the original patent's description such that the original description '***clearly allow[s] persons of ordinary skill in the art to recognize that the inventor invented what is claimed***.'" *In re Depomed Patent Litig.*, No. CV 13-4507 (CCC-MF), 2016 WL 7163647, at *28 (D.N.J. Sept. 30, 2016) (quoting *Antares Pharma, Inc. v. Medac Pharma Inc.*, 771 F.3d 1354, 1362 (Fed. Cir. 2014)) (emphasis added).

unrebutted that a POSITA would understand this disclosure to clearly teach a single processor embodiment. (TT (ECF No. 271) 5:23-7:11)

83. Google's counsel next argues that Professor Dunsmore misreads the specification and the disclosure that "*the functions carried out by processors 920 and 940 may comprise* ***separate, secure logical processes executing on the same physical processor***." Google's counsel, through a tortured explanation, argues that the foregoing language is actually better interpreted as describing "processes running on two processors, not one." This is simply not possible, and contrary to the unrebutted testimony of Professor Dunsmore.

84. Finally, Google argues it is irrelevant that the originally applied for claims of the '247 Patent were directed toward a single processor embodiment citing *Antares* for the proposition that the "original claims" are not relevant to original patent analysis of a reissue patent. ECF No. 292 at 22 (citing *Antares Pharma, Inc. v. Medac Pharma Inc.*, 771 F.3d 1354, 1355 (Fed. Cir. 2014)). Google misreads *Antares* and misapprehends the originally-filed-for claims' impact on the specification. It is settled law that the original claim as filed in the original '247 Patent application is considered part of the disclosure and specification, and thus relevant to the analysis of written description.[4] The portion of *Antares* cited by Google relates to originally

[4] *See Enzo Biochem, Inc. v. Gen-Probe Inc.*, 323 F.3d 956, 972 (Fed. Cir. 2002) (Louri stating in concurring opinion:

> There is no question that an original claim is part of the specification. That was the question answered in the affirmative by *In re Gardner,* 480 F.2d 879, 178 USPQ 149 (C.C.P.A.1973), in which the CCPA found compliance with the written description requirement over the objection of the PTO Commissioner, who argued that an original claim should not be considered part of the written description unless the specification was amended to contain the subject matter of the original claim.

"issued" claims and how they disclosed a different invention than the reissue claims, and thus were not relevant to the court's original patent analysis. *Antares Pharma, Inc.*, 771 F.3d at 1362. Here, the originally-filed-for claims (not issued claims) described embodiments of the invention executed on a single processor and are considered part of the '247 Patent's original disclosure. (PTX-007 at R00000587) The originally-filed-for claims with the single processor embodiment were later amended to add a second processor limitation to transverse prior art cited by the patent office. (*Id.* at R00000679-680) But, as testified to by Professor Dunsmore, the specification clearly discloses a single processor embodiment which is consistent with the originally-filed-for claims which are part of the original disclosure.

Findings of Fact Related to Google's "Single Processor" Argument:

85. In light of the foregoing, the Court finds the following:

- Google had the opportunity but failed to offer evidence at trial on the question of whether a POSITA would recognize the single processor embodiment as disclosed in the specification;
- Starting at column 16, lines 22-24, the specification plainly discloses an embodiment of the invention using two logical processes executing on a single processor. (PTX–007, Col. 16:22-24);
- Column 16 of the specification describes Figure 9, and at the beginning of the description suggests processor (960) may be a single processor, a dual-processor as depicted by first processor (920) and second processor (940), or a multi-core processor. (PTX–007, Col. 16:8-13);
- The original patent claims filed with the original patent application with the '247 Patent, which are considered part of the '247 Patent's original disclosure, also discloses single processor embodiments; and
- Professor Dunsmore testified unrebutted that a POSITA would understand this disclosure to clearly teach a single processor embodiment. (TT (ECF No. 271) 6:24-7:11, 8:2-15)

3. The Specification Discloses Use of a "First Web Browser Process Passing To, Or Exchanging Website Data With A Second Web Browser Process" Embodiment.

86. Google contends that claim 43 of the '500 patent, claim 49 of the '529 patent, and claim 67 of the '528 patent are invalid under the original patent rule for failure to disclose a "first web browser process" that passes and/or exchanges website data with the second web browser process. (ECF No. 292 at 23)

Plaintiffs' Position:

87. Google had the opportunity but failed to offer expert testimony at trial on the question of whether a POSITA would consider the "passing" or "exchanging" of website data between the first and second web browser processes as adequately disclosed.

88. Figure 6 discloses initiating an "interactive network process" via P2. (PTX – 001, Fig. 6).

89. The term "interactive network process" on its face includes web browser processes which by definition interact with the network.

90. Figure 6 discloses P2 retrieving "interactive network process" status data, passing the data to P1, and P1 passing the updated "interactive network process status data" back to P2.

91. The specification when describing Figure 6 notes that a "interactive network process" could be an "interactive game" but never limits an "interactive network process" to just online games. (PTX – 001, Col. 14:3-4 ("Interactive network process such as interactive gaming"); (Col. 14:30-31 "allows an interactive network process, such as online gaming")).

92. The specification makes a distinction between "interactive network process status data" and "game status data" or "game status information" signifying that "interactive network process status data" is broader than just "game status data." (PTX – 001, Col. 14:49-51).

93. Consistent with Figure 6, column 14 discloses passing "interactive network process status data" from P1 to P2 and back to P1. (PTX – 001, Col. 14:32-45)

94. This is consistent with Figure 1 which discloses a two-way communication arrow between P1 and P2. (PTX – 001, Fig. 1)

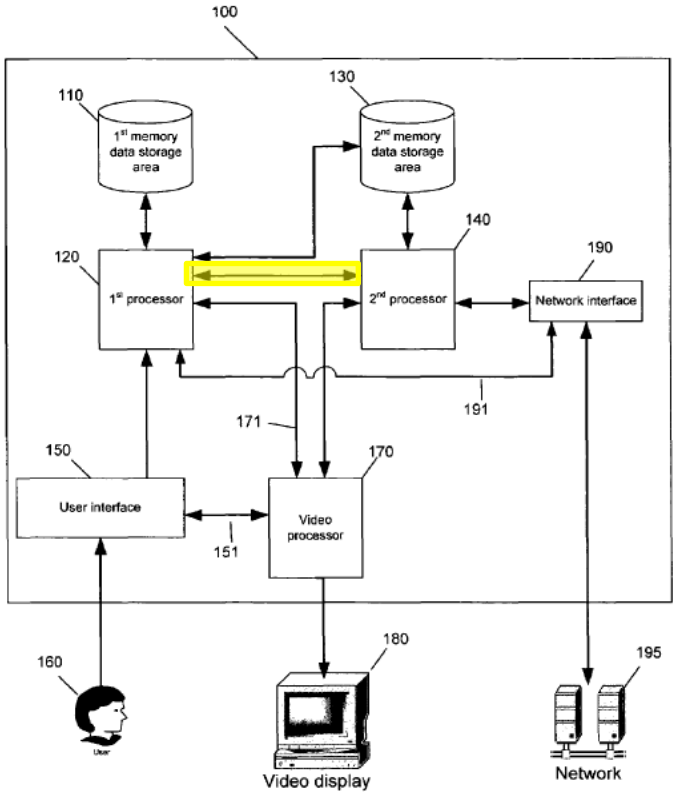


Fig. 1

95. P1 and P2 can be considered processors pursuant to Figure 6 and column 16, but can also be interchanged for logical processes disclosed in column 16, lines 22-43.

96. Professor Dunsmore testified that a POSITA would interpret P1 and P2 as "web browser processes" because both are capable of accessing website data. *See supra*, ¶¶ 42-46, 48.

Response to Google's Position:

97. Google offered no affirmative evidence to establish whether a POSITA would interpret that specification as disclosing a first web browser process capable of passing or

exchanging website data with the second web browser process. Instead, Google's counsel argues no such disclosure exists.

98. Google attempts to counter the passing and exchanging of "interactive network status data" between P1 and P2 by arguing that "interactive network status data" does not specifically disclose "website data." Google's flawed rationale is that Figure 6 and column 14 are limited to online gaming and thus "interactive network status data" must refer to "game status data" and not "website data."

99. As discussed above, a POSITA would interpret the "interactive network process" of Figure 6 and column 14 to include web browser processes within its plain and ordinary definition. *See supra*, ¶¶ 30, 71, 89. The specification clearly discloses P1 and P2 passing back and forth network status data and the figures disclose the same with two-way arrows. Moreover, there is nothing in Figure 6 or column 14 that limits "interactive network process" to online gaming, and to the contrary, the specification is clear that gaming is just one example of an "interactive network process."

Findings of Fact Related to Google's "Passing" Website Data Argument:

100. In light of the foregoing, the Court finds the following:

- Google had the opportunity but failed to offer evidence at trial on the question of whether a POSITA would recognize the "passing" of website data as disclosed in the specification;
- The specification discloses "interactive network processes" and teaches that online gaming is just one example of an "interactive network process";
- "Interactive network processes" on its face would include "web browser processes" and is understood by a POSITA to include "web browser processes";
- Both first process (P1 120) and second process (P2 140) in the "interactive network process" embodiment described in Figure 6 and column 14 of the

specification have access to "interactive network status data" and exchange that data between the two processes;

- "Interactive network process data" exchanged between P1 and P2 would include website data;

- Figure 1 discloses a first process (P1 120) and second process (P2 140) with two-way communication arrows between each other.

4. The Specification Discloses a "First Web Browser Process Initializing a Second Web Browser Process."

101. Google contends that claim 49 of the '529 patent violates the original patent rule for claiming without support a "first web browser process" that "initializes" a "second web browser process."

Plaintiffs' Position

102. Claim 49 discloses in part "executing instructions in the first web browser process wherein the first web browser process is configured to . . . ***initialize the at least one second protected web browser process***." (PTX – 002, Col. 23:4-8) The Court finds Google has failed to prove by clear and convincing evidence that a POSITA would not find this limitation clearly disclosed in the specification. Moreover, based on the evidence discussed below, the Court finds a POSITA would find this limitation clearly disclosed by the specification.

103. As discussed above, the specification uses the terms "first" and "second" "logical processes" to refer interchangeably to P1 and P2, and that "logical processes" refer to a number of possible computer processes including "web browser processes." *See supra*, ¶¶ 39-42, 46-48, 52-59.

104. Figure 2 of the '247 Patent describes "(P1)" instructing "(P2)" to initiate a "protected process" and open one or more process windows (step 220). (PTX-001, Fig. 2)[5]

105. The discussion of Figure 2 discloses the user launching of a "protected process" such as Internet Explorer or Netscape Navigator. The user inputs commands to launch the overall program. (PTX – 001, Col. 11:2-4; *see also* step 210, Figure 2) The specification then describes the "1st processor 120" (P1) instructing the "2nd processor 140" (P2) to initiate the protected process and open one or more process windows. (*Id.*, Col. 11:4-6) The specification further explains that the protected process may be "browsing the internet." (*Id.,* Col. 11:6-10)

106. Similarly, Figure 10 discloses "(P1) instruct[ing] 2nd processor (P2) to initiate protected process and open process window." (PTX-001, Fig. 10)

107. The specification then describes Figure 10 as disclosing "P1 120 instruct[ing] processor P2 140 to initiate a protected process and open a process window." (*Id.,* Col. 17:16-18) When it is understood that P1 and P2 also refer to "logical processes" and not just processors,[6] it is plain that the specification discloses in multiple places a first web browser process (P1) capable of initializing a second web browser process (P2).[7]

---

[5] Google argues half-heartedly elsewhere that P1 and P2 only refer to processors and not logical processes. (ECF No. 292 at 19) As discussed above, column 16 of the specification teaches that the functions of P1 and P2 can be "logical processes" on a single processor carrying out the invention) *See supra*, ¶¶ 82, 85, 95. Accordingly, any argument that P1 and P2 only refer to processors, and not also "logical processes," is without merit.

[6] *See* discussion in PTX-001, Col. 16:22-47 (e.g., "Referring again to Fig. 9, the functions carried out by processors 920 and 940 may comprise separate, secure logical processes executing on the same physical processor."); *see supra*, ¶ 95.

[7] Further, it is not disputed that "web browser processes" are one of many types of "logical processes." (TT (ECF No. 271) 67:21-68:4 (Google's expert, Dr. Arbaugh, testifying a web browser process is just a type of logical process))

Response to Google's Position:

108. Google had the opportunity but failed to offer evidence at trial on the question of whether a POSITA would recognize a "first web browser process is configured to . . . initialize the at least one second protected web browser process" as disclosed in the specification. Instead, Google's counsel argued that nowhere specifically in the specification is it precisely stated that a first web browser process initializes a second web browser process.

109. Google's attorney argument ignores that the specification teaches P1 and P2 can also refer to "logical processes" that carry out the same functions as the first and second processors. Google concedes that through the specification there are multiple disclosures where P1 launches (or instructs P2 to launch) a protected process. And it is undisputed that the "logical processes" disclosed in the specification include "web browser processes." Accordingly, there is no basis to support Google's claim that a POSITA would find that the specification fails to disclose a first web browser process (i.e., a logical process) capable of initializing a second web browser process. At a minimum, Google cannot meet its burden of clear and convincing evidence that in light of the foregoing disclosures in the specification that a POSITA would not find this limitation clearly disclosed.

Findings of Fact Related to Google's "Initializing" a Second Web Browser Process Argument:

110. In light of the foregoing, the Court finds the following:

- Google had the opportunity but failed to offer evidence at trial on the question of whether a POSITA would recognize a first web browser process initializing a second web browser process as disclosed in the specification;

- The specification, in the figures and multiple places throughout the body, discloses that P1 is capable of opening and/or initializing processes on P2;

- The specification further discloses that the functions carried out by processor P1 and processor P2 can also be carried out by, and referred to as, "logical processes";

- It is undisputed that "logical processes" can be any number of computer program processes including "web browser processes";

- The specification discloses a user opening a web browser program, followed by P1 instructing P2 to open one or more protected process windows for web browsing.

B. FACTS RELATED TO GOOGLE'S "RECAPTURE" DEFENSE.

111. Google previously moved for summary judgment under 35 U.S.C. § 251 for improper recapture on Plaintiffs' single processor claims. (ECF No. 148 at 12-27) The Court found a material dispute of the underlying facts related to whether the reissue claims were directed to "overlooked aspects." (ECF No. 212 at 9-10) The Court denied Google's motion without reaching Plaintiffs' additional arguments as to why there is no improper recapture.

1. Claim 67 and Claim 43 are Directed Toward Overlooked Aspects of the Original '247 Patent.

112. The rule against recapture under 35 U.S.C. § 251 is not triggered where the challenged reissued claims are directed to "overlooked aspects" of the original patent application. "Overlooked aspects" are defined as "patentably distinct (1) inventions; (2) embodiments; or (3) species not originally claimed, and not mere incidental features of the originally-claimed invention. *In re Mostafazadeh*, 643 F.3d 1353, 1360 (Fed. Cir. 2011). The parties dispute whether claim 67 of the '528 patent and claim 43 of the '500 patent are directed towards "overlooked aspects," and thus, whether the rule against recapture is triggered.

Plaintiffs' Position:

113. Preliminarily, the issue of recapture was raised by the patent office in prosecution of the challenged reissue claims on two occasions. PTX-10 at R00001657-1659, ¶¶ 4-8; PTX-

R00002194-2195, ¶¶ 4-5. Both times, the patent office withdrew the recapture rejections after explanation by the inventors. (PTX-010 at R00001660-65, 1657-59, 1747-1750, 1786-1805)

a) The Original Claims of the '247 Patent Claimed an Isolated First Process, Where the Reissue Claims Do Not Have an Isolated First Process Because They Claim a First "Web Browser Process."

114. Originally-filed claim 1 discloses a first logical process with access only to the first memory space and second memory space. (PTX-007 at R00000587) The originally-filed claim 1 further discloses a second logical process with access to the second memory space and capable of exchanging data across a network of computers. (*Id.*)

115. The originally-filed claim 1 contained a first and second logical process where only the second logical process had access to the network. (*Id*.) By comparison, the challenged reissue claims contain a first and second web browser process where both processes have access to the network.

116. Google's own experts and the Court have already interpreted the original '247 Patent as excluding the very embodiment Google claims is covered by the original claims:

117. Google's expert, Dr. Arbaugh, confirmed it was his opinion that the original '247 Patent required a second processor to isolate the computer system from the network. (TT (ECF No. 268) 112:10-113:7)

118. Google's expert, Dr. Kogan, opined that the reissue patents disclosed a different invention from the original '247 Patent, but inconsistently couched his opinion as applying only for the original patent rule, not for recapture. (TT ECF No. 268) 30:5-31:5)

119. The Court previously ruled that "the essence of the invention claimed in the '247 Patent was isolation—only the second logical process could access the network; the rest of the system could not." (ECF No. 212 at 8) This is different than the challenged reissue claims as the

first process for both challenged reissue claims is capable of accessing website data, and thus un-isolated.

120. Google conceded under the original patent rule in its Rule 50(a) motion for JMOL that "the invention disclosed in the reissue patents is entirely different from the one disclosed in the original '247 Patent …. [The] first logical process ran on the first processor and a second logical process ran on the second processor, and only the second process … was a network-interface program or browser." (ECF No. 251 at 5-6)

b) The Challenged Reissue Claims Are Patentably Distinct.

121. When Google originally filed for summary judgment on recapture, the Court noted that determination of whether a reissue claim was "patently distinct" over the original claims required consideration of whether the reissue claims were obvious in light of the original claims. (ECF 212 at 9) Because neither party at summary judgment presented evidence on the issue of obviousness, the Court denied the motion because of unresolved underlying facts. (ECF No. 212 at 10) Notwithstanding the Court's direction to provide evidence on the question of obviousness, Google had the opportunity but failed to offer any such evidence at trial. The prosecution history of the challenged reissue claims establishes their non-obviousness over the original claims.

122. The inventors originally claimed in the '247 Patent an isolated first logical process and un-isolated second logical process, and added a second electronic data processor during prosecution of the '247 Patent to distinguish Corthell. (PTX-007 at R0000672, R0000679-682) The purpose of the second electronic data processor was to provide additional physical isolation between the first logical process and the network. (PTX-007 at R0000679-682)

123. In reissue, the inventors narrowed the original claims from "logical processes" to "browser" processes. (PTX-10 at R00001550, R00001557) In doing so, the inventors claimed an

un-isolated first process (because it was a "browser process" with access to the Internet) that was patently distinct from the original '247 claims that disclosed an isolated first process that used a second electronic data processor for additional physical isolation from the network.

124. The examiner rejected the reissue claims as anticipated and obvious in light of Narin because Narin disclosed an isolated first process and un-isolated second process executing on a single processor. (PTX-010 at R00001787-1805) The inventors argued that their first "browser process" was distinct from Narin because it was not isolated where Narin's first process was isolated. (*Id*. at R00001868-871)

125. The examiner responded that the claims did not specify the first process as a "web" process capable of accessing website data. (*Id*. at R00001911-912) In response, the inventors added "web" to specify the reissue claims were directed to "web browser processes" and that the first "web browser process" was capable of accessing website data, and therefore, un-isolated. (PXT010 at R00001971-73, 1990-91)

126. In response, the examiner withdrew his rejections and allowed the claims. (*Id*. at R00002025) Since the examiner is a POSITA, or at a minimum informs how a POSITA would interpret the claims,[8] the withdrawal of the obviousness rejection in response to narrowing to "web browser process" (and thus specifying the first browser process is un-isolated) is direct and persuasive evidence that the challenged reissue claims are non-obvious (i.e. patentably distinct) over the original '247 Patent claims.

[8] *See e.g., Syneron Med. Ltd. v. Viora Ltd.*, No. 2:14-cv-639, 2015 WL 1952360, at *17 (E.D. Tex. Apr. 10, 2015) ("[S]tatements by the examiner can inform how a person of ordinary skill in the art would interpret the claims.") (citing *Salazar v. Procter & Gamble Co*., 414 F.3d 1342, 1347 (Fed. Cir. 2005)); *Wi-Lan USA, Inc. v. Alcatel-Lucent USA, Inc.*, No. 12-23568-CIV, 2013 WL 4811233, at *18 n.9 (S.D. Fla. Sept. 9, 2013) ("Patent examiners are presumed to be persons of ordinary skill in the art in the relevant technical field."); *Zest IP Holdings, LLC v. Implant Direct Mfg., LLC*, No. 10CV0541-LAB, 2012 WL 1721255, at *9 (S.D. Cal. May 16, 2012).

Response to Google's Position:

127. Google raises three arguments for why "overlooked aspects" should not apply. First, Google argues the subject matter of the challenged reissue claims was included in the original patent claims for the '247 Patent, and thus, in Google's interpretation of the case law, cannot be considered "overlooked." Second, Google argues there is no two "web browser process" embodiment disclosed in the specification, and thus, Plaintiffs should not be allowed to claim it. Finally, Google argues narrowing to two web browser processes, and thus removing isolation from the first process, was obvious and not patently distinct.

128. Google's first argument that the original claims are broad enough to encompass the same subject matter of the reissue claims is incorrect and contrary to prior positions taken in this case. The original claims disclosed a "first logical process" with access only to the first memory space and second memory space. (PTX-007 at R0000587) Professor Dunsmore conceded on cross examination that, if read broadly enough in a vacuum, the original filed-for claims could encompass a first logical process with access to the network (i.e., a "web browser process"). (TT (ECF No. 271) 41:6-23) However, claims must be construed with reference to the intrinsic record,[9] and here, the Court has already noted "the essence of the invention claimed in the '247 Patent was isolation—only the second logical process could access the network; the rest of the system could not." (ECF No. 212 at 8)

129. Consistent with the Court's finding, Google's expert, Dr. Arbaugh, opined that the original '247 Patent required a second processor to isolate the computer system from the network. (TT (ECF No. 268) 113:10-113:7)

[9] *See David Netzer Consulting Eng'r LLC v. Shell Oil Co.*, 824 F.3d 989, 993 (Fed. Cir. 2016) (claims are construed with reference to the intrinsic record).

130. Similarly, Google's expert, Dr. Kogan opined that the reissue patents disclosed a different invention from the original '247 Patent.[10] (TT (ECF No. 268) 30:5-31:5) Google underscored the distinction between the reissue claims and the '247 Patent claims when it filed its Rule 50(a) motion for JMOL and stated that "the invention disclosed in the reissue patents is entirely different from the one disclosed in the original '247 Patent . . . [The] first logical process ran on the first processor and a second logical process ran on the second processor, and only the second process . . . was a network-interface program or browser." (ECF No. 251 at 5-6)

131. As discussed above, the reissue claims are different than the original '247 claims in that they claim two web browser processes, and thus remove isolation with respect to the first process (which was isolated under the '247 Patent claims).

132. Google's second argument is a rehash of its original patent rule argument attacking the first "web browser process limitation." (*See* discussion, *supra* ¶¶ 72-85) For all the reasons discussed above, the specification clearly discloses a two "web browser process" embodiment. (*Id*.)

133. Google's final argument is that the narrowing of the claims in reissue from logical processes to web browser processes was too minor to be considered patently distinct. (ECF No. 292 at 16)[11] This is incorrect. First, Google had the opportunity but did not offer evidence at trial on the question of obviousness between the original '247 claims and the challenged reissue

[10] On cross-exam, Dr. Kogan did try and qualify his opinion by saying the reissue patents disclosed a different invention from the original '247 Patent, but that this opinion was only with respect to his analysis under the original patent rule, and not for purposes of recapture. (TT (ECF No. 268) 30:5-31:5)

[11] Specifically, Google argued that "Changing the originally filed claims of the '247 Patent to recite a 'first web browser process' requires revising only one term, 'first logical process,' to a 'first web browser process.' This change is minor given that a 'web browser process' is a type of 'logical process.'"

claims despite the Court's clear guidance to do so. (ECF No. 212 at 9-10) Second, claiming of a first web browser process with access to the network (i.e., an "un-isolated" first process), was recognized by the patent office as the key amendment to gain allowance over the prior art. (PTX–010, R00001911-1912, 1973-1975, 1990-1991) If claiming a first web browser process was considered a nominal, un-inventive step, the patent office would not have granted allowance.

Findings of Fact Related to "Overlooked Aspects":

134. In light of the foregoing, the Court finds the following:

- When the inventors first sought reissue on the single processor claims, the patent office raised improper recapture as a ground for rejection because of the lack of a second processor, but ultimately withdrew the rejection in response to the inventors' arguments;
- The '247 Patent claims are directed towards a different invention than the challenged reissue claims;
- The '247 Patent claims are directed toward isolation where only the second process could access the network and the rest of the system could not;
- The challenged reissue claims are patentably distinct from the '247 claims because they no longer claim an isolated first process;
- Google and its experts have admitted on several occasions that the invention disclosed in the '247 Patent claims is materially different than the invention disclosed in the challenged reissue claims;
- The Court incorporates by reference all its prior findings in paragraph 71 regarding the specification's disclosure of two "web browser processes";
- The inventor's amendment of the challenged reissue claims to first and second "web browser processes" was the key amendment to transverse the prior art and gain allowance; and
- Google had the opportunity but did not offer evidence at trial on the question of whether the challenged reissue claims are patentably distinct, and thus non-obvious, in light of the original '247 Patent claims.

2. There is no Recapture Because Claims 43 and 67 Were Materially Narrowed to Avoid Substantial Recapture of the Surrendered Subject Matter (Step Three of the Recapture Test).

135. The Court finds that even if Google could establish the challenged reissue claims were not directed towards "overlooked aspects" and thus triggered the rule against recapture, Google still failed to prove improper recapture because the challenged reissue claims were materially narrowed in a way that avoids substantial recapture—step three of the recapture test.

Plaintiffs' Position:

a) Background: The Patent Office Originally Raised Corthell Against the '247 Patent; In Response the Inventors Amended Their Isolated/Non-Isolated Claims to Add a Second Processor.

136. In prosecution of the original '247 Patent, the examiner rejected the original claims, citing Corthell as disclosing every limitation. (PTX-007 at R00000651-652) In response, the inventors amended the original claims, adding a "second electronic data processor" to provide "physical isolation" between the first and second logical processes. (*Id*. at R00000679-680) The inventors explained why the pending claims were no longer anticipated by Corthell:

> As per claim 1, Examiner believes that Corthell discloses the Applicant's claimed invention. … While Corthell does teach partitioning of the memory space into a primary partition (Figure 2, [block 204]) and a protected partition (Figure 2, [block 206]), ***he does not teach or suggest the partitioning of "secure" and "unsecure" instruction execution onto separate electronic data processors.***
>
> In stark contrast, Applicants teach the use of a multi-processor computer having at least a first and second electronic data processor capable of executing instructions using a common operating system. . . . Such a configuration allows for a physical hardware separation or partitioning of instruction execution on physically separate processors (or processor cores), in contrast to Corthell's teaching of executing all instructions on a single electronic data processor. ***By physically separating the execution of trusted instructions*** (the operating system running on the first electronic data processor, for example) ***from untrusted network process instructions*** (a Java script downloaded for the internet, for example), a higher level of security may be achieved.

(*Id.* at R00000679-680 (emphasis added)) To distinguish Corthell's isolated process and open (or non-isolated) process executing on the same processor the inventors added the second processor limitation which added physical isolation of the first logical process.

b) Background: Cioffi and Rozman Pursue Reissue Claims.

137. As Mr. Cioffi testified at trial, the intent of the new reissue claims was to pursue unclaimed embodiments disclosed in the original '247 specification. (TT (ECF No. 263) 97:24-98:6, 122:15-124:19) In particular, the inventors claimed "browser processes" where the first process was no longer isolated from the network. (PTX-010 at R00001550 (Claim 1), R00001557 (Claim 21)) The inventors also dropped use of a second electronic data processor for many of the reissue claims. (*Id*.)

138. Professor Dunsmore explained that the inventors were able to drop the second electronic data processor because it was added to the original '247 Patent claims to physically isolate the first logical process from the network. (TT (ECF No. 271) 13:8-20) Because the first logical process was now a "browser process" with access to the network (i.e. un-isolated), there was no longer a need for physical isolation from the network by the second electronic data processor. (*Id*.)

139. In the first office action, the PTO raised rejections under recapture and anticipation. The PTO noted that applicants had "removed the limitation that the 'second logical process executing on the second electronic data processor is' capable of exchanging data across a network of one more computers" and that "the reissue claims were not materially narrowed in other respects, and therefore recapture exists." (PTX-010 at R00001657-59) The examiner also rejected all the reissue claims as anticipated under the "van der Made" reference but did not re-raise Corthell as an anticipating prior art reference. (*Id*. at R00001660-65)

140. The inventors explained why there was no recapture and why "van der Made" did not anticipate. (*Id*. at R00001747-750) The PTO withdrew its rejection, finding the inventors' arguments "persuasive," but raised a new anticipatory reference, Narin, against all the reissue claims. (*Id.* at R00001786-1805)

141. The inventors attempted to traverse Narin, explaining that Narin's "closed [first] process" was not the same "first browser process" found in the reissue patents because Narin's closed first process did not have access to the network. (*Id.* at R00001866-871) The examiner acknowledged the inventors' argument that their "first browser process is a web process," but noted the claims did not specify the "claimed browsers are actually web browsers." (*Id*. at R00001911-12)

142. In response to this second rejection, the inventors narrowed the term "browser process" to "web browser process" and specified that the "first browser process" is "capable of accessing data of a website via the network." (*Id*. at R00001973, 1979, 1990-91) The reissue claims were subsequently allowed.

c) Claiming Web Browser Processes Materially Narrowed the Reissue Claims, and the Narrowing Was Related to the Surrendered Subject Matter.

143. Professor Dunsmore explained to the jury that by claiming "web browser processes" in the reissue claims instead of the original "logical processes," the inventors materially narrowed the reissue claims because they now excluded all types of processes other than "web browser processes." (TT (ECF No. 271) 12:1-13:2)[12]

[12] Mr. Cioffi testified that narrowing to web browser processes in reissue was a material narrowing directly related to reclaiming the use of a single processor. (TT (ECF No. 263) 181:3-9)

144. Professor Dunsmore also explained that this narrowing was directly related to the surrendered subject matter—a single processor embodiment where the first logical process was isolated from the network, but the second logical process was not. (TT ECF No. 263) at 13:3-20, 14:12-19, 14:21-15:22)

145. As the Court previously recognized, the invention claimed in the '247 Patent was "isolation" where "the second logical process could access the network [but] the rest of the system could not." (ECF No. 212 at 8)

146. When the inventors amended the '247 Patent's original claims to overcome Corthell, they added a second electronic processor to provide physical isolation between the first and second logical processes. (PTX-007 at R00000672, 679-680; TT (ECF No. 271) 28:10-30:8) In adding the second physical processor during prosecution of the '247 Patent, the inventors surrendered the isolation embodiment using a single processor (i.e., the inventors surrendered the embodiment where the first process was isolated from the network, but the second process was not, and both processes executed on a single processor). (PTX-007 at R00000679-680)

147. Professor Dunsmore explained that when the inventors later narrowed the reissue claims to "web browser processes," the first process was no longer isolated because web browser processes must be capable of accessing website data. (TT (ECF No. 271) 13:3-20, 14:12-19, 14:21-15:22)

148. In Professor Dunsmore's opinion, because the inventors were no longer claiming isolation of the first logical process from the network, reintroducing single processor claims was not improper recapture because narrowing the claims to a first "web browser process" was related to the surrendered subject matter. (TT (ECF No. 271) 13:3-20, 14:12-19, 14:21-15:22) The second electronic data processor was originally added to provide physical isolation of the

first process, but when the inventors narrowed to an un-isolated first process ("web browser process") the original basis for adding the second processor data processor (to provide physical isolation) had been removed.

Response to Google's Position:

149. Google argues claims 43 and 67 are not materially narrowed with respect to the surrendered subject matter because the single processor has been added back into the claims. (ECF No. 292 at 11) Google's argument sets up a straw man by defining the surrendered subject matter as only the single processor embodiment. However, the surrendered subject matter was not only the single processor embodiment, but also an isolated first process and un-isolated second process. Stated differently, the '247 Patent application originally claimed an isolated first process and un-isolated second process executing on a single processor. (TT (ECF No. 271) 13:3-20) In prosecution the inventors added a second processor to the isolated first process/un-isolated second process embodiment to transverse Corthell. (*Id.* at 28:13-25) In doing so, they surrendered the isolated first process/un-isolated second process embodiment executed on a single processor.

150. The challenged reissue claims have recaptured the single processor limitation, but NOT the isolated first process and un-isolated second process that was an important aspect to the originally claimed single processor embodiment.

151. When the inventors sought reissue on claims with a single processor, they took care not to claim an isolated first process and un-isolated second process as that would have recaptured the very embodiment that they surrendered. Instead, the inventors' claimed two web browser processes (i.e., two un-isolated processes) with a single processor which was the key step to gaining allowance over the prior art. The inventors surrendered a single processor in

conjunction with an isolated first process and un-isolated second process. The inventors recaptured a single processor with an un-isolated first process and un-isolated second process.

Findings of Fact Related to Recapture – Step Three:

152. In light of the foregoing, the Court finds the following:

- The essence of the invention claimed in the '247 Patent was isolation—only the second logical process could access the network--the rest of the system could not;
- According to the prosecution history, Corthell disclosed an isolated first process and un-isolated second process executed on a single processor;
- In response to the Patent Office's rejection under Corthell, the inventors added a second electronic data processor to provide additional physical isolation between the first and second logical processes;
- In transversing Corthell, the inventors surrendered their isolated first process/un-isolated second process embodiment executed on a single processor;
- In reissue, the inventors materially narrowed the scope of the reissue claims over the original '247 Patent claims by claiming two "web browser processes." The inventors claimed a first and second un-isolated process instead of a first isolated process and second un-isolated process;
- The inventors added back in a single processor for many of the reissue claims. In doing so, the inventors partially recaptured the original isolated/un-isolated single processor embodiment by claiming a single processor. However, the inventors did not substantially recapture the originally surrendered embodiment because the reissue claims were narrowed to first and second web browser processes that were both un-isolated; and
- As explained by Professor Dunsmore, the narrowing of the reissue claims to two web browser processes (i.e., two un-isolated processes) was directly related to the surrendered subject matter because the second processor was added to provide additional physical isolation. In reissue, once isolation was removed from the first process (by the narrowing of the claims to "web browser processes"), there was no requirement to maintain the second processor limitation for physical isolation purposes.

CONCLUSIONS OF LAW

I. LEGAL STANDARD

A. THE REISSUE STATUTE, 35 U.S.C. § 251.

1. The reissue statute, 35 U.S.C. § 251, provides in relevant part that "[w]henever any patent is, through error, deemed wholly or partly inoperative … the Director shall … reissue the patent for the invention disclosed in the original patent.… No new matter shall be introduced into the application for reissue." The Federal Circuit has always held that the statutory requirement of Section 251 is a legal question for the Court that involves underlying determinations of fact that should not be disturbed unless they are "clearly erroneous." *In re Youman*, 679 F.3d 1335, 1343 (Fed. Cir. 2012); *Forest Labs., Inc. v. Ivax Pharm., Inc.*, 501 F.3d 1263, 1270 (Fed. Cir. 2007); *Medtronic, Inc. v. Guidant Corp.,* 465 F.3d 1360, 1373 (Fed. Cir. 2006); *Pannu v. Storz Instruments, Inc.*, 258 F.3d 1366, 1370 (Fed. Cir. 2001); *Hester Indus., Inc. v. Stein, Inc.*, 142 F.3d 1472, 1479 (Fed. Cir. 1998); *In re Clement*, 131 F.3d 1464, 1468 (Fed. Cir. 1997).

2. The Court has found that Google's 35 U.S.C. § 251 defenses present "questions of law" for determination by the Court analogous to claim construction and prosecution history estoppel. (ECF No. 319 at 8-9) Nonetheless, where a question of law turns on how a POSITA would interpret disclosures in the specification, it is the Court's purview to make factual findings regarding the understanding of a POSITA which will not be disturbed on appeal absent clear error. *See Eli Lilly & Co. v. Teva Parenteral Meds., Inc.*, 845 F.3d 1357, 1369 (Fed. Cir. 2017) (noting the question of indefiniteness is a part of claim construction and therefore a question of law, but clarifying that "the district court's underlying determination, based on extrinsic

evidence, of what a person of ordinary skill would understand" is a question of fact reviewed for "clear error.").

B. THE ORIGINAL PATENT RULE UNDER 35 U.S.C. § 251.

3. "[T]he essential inquiry under the 'original patent' clause of § 251 … is whether one skilled in the art, reading the specification, would identify the subject matter of the new claims as invented and disclosed by the patentees." *In re Amos*, 953 F.2d 613, 618 (Fed. Cir. 1991). "A reissue application must find support in the original patent's description such that the original description 'clearly allow[s] persons of ordinary skill in the art to recognize that the inventor invented what is claimed.'" *In re Depomed Patent Litig.*, No. 13-4507, 2016 WL 7163647 at *28 (D.N.J. Sept. 30, 2016) (quoting *Antares Pharma, Inc. v. Medac Pharma Inc.*, 771 F.3d 1354,1362 (Fed. Cir. 2014)). The original patent rule requires that reissue claims must be to matter "explicitly disclosed and taught rather than merely suggested or indicated in the specification." *In re Depomed Patent Litig.*, 2016 WL 7163647 at *28 (citation omitted).

4. The original patent analysis is conducted through the eyes of a POSITA:

> [O]ur cases explained that the *Industrial Chemicals* [original patent] standard is analogous to the written description requirement, which, as our en banc decision in *Ariad Pharmaceuticals, Inc. v. Eli Lilly & Co.,* 598 F.3d 1336 (Fed. Cir. 2010) made clear, ***requires that the patent description clearly allow persons of ordinary skill in the art to recognize that the inventor invented what is claimed***.

Antares, 771 F.3d at 1362 (internal citations and quotations omitted) (emphasis added).

C. RECAPTURE UNDER 35 U.S.C. § 251.

5. "The recapture rule bars a patentee from recapturing subject matter, through reissue, that the patentee intentionally surrendered during the original prosecution in order to overcome prior art and obtain a valid patent." *In re Youman*, 679 F.3d 1335 at 1343 . Recapture is assessed using the following three-step inquiry:

> (1) whether and in what respect the reissue claims are broader in scope than the original patent claims;
>
> (2) whether the broader aspects of the reissue claims relate to subject-matter surrendered in an original application; and
>
> (3) whether the reissue claims were materially narrowed in other respects, so that the claims may not have been enlarged.

(ECF No. 319) (Order) at 7-8 (citing *Greenliant Sys., Inc. v. Xicor LLC*, 692 F.3d 1261, 1267 (Fed. Cir. 2012).

6. If the answer to the first two questions is yes, and the last no, "the surrendered subject matter has crept into the reissue claims and they are barred under the recapture rule." *In re Youman*, 679 F.3d at 1345. However, the recapture rule is not triggered if the reissued claims are directed to overlooked aspects of the invention—i.e., patentably-distinct embodiments that are described in the specification but not originally claimed. *In re Mostafazadeh*, 643 F.3d 1353, 1360 (Fed. Cir. 2011).

II. DISCUSSION

A. GOOGLE FAILED TO PROVE VIOLATION OF THE ORIGINAL PATENT RULE WITH CLEAR AND CONVINCING EVIDENCE.

7. Google contends that Asserted Claims 43 of the '500 patent, 5 and 67 of the '528 patent and claim 49 of the '529 patent are invalid as violating the Original Patent Rule. In order to prevail on its invalidity contention, Google must prove by clear and convincing evidence that a POSITA would not recognize the asserted reissue claims as clearly and unequivocally disclosed in the specification. *Antares*, 771 F.3d at 1362.

8. Google alleges four separate violations of the original patent rule in its post-trial motions, although it only raised two of these alleged violations of the original patent rule during trial. None of Google's arguments are persuasive as set forth below:

1. The '247 Patent Specification Clearly Discloses a "First Web Browser Process."

9. Google argues that "[t]here is no clear and unequivocal disclosure in the '247 Patent specification" of the term "first web browser process." As background, all of the asserted claims were narrowed in reissue from "logical processes" to "web browser processes." FF ¶29. The Court defined "web browser process" as "a process capable of accessing website data." It is Google's burden to show by clear and convincing evidence that a POSITA reading the specification would NOT identify "a ***first*** process accessing website data" as "clearly and unequivocally disclosed."

10. Google points to the testimony of Dr. Kogan, who opined that the "interactive network process" embodiment of Figure 6, discussed in column 14, is limited to "online gaming" and does not involve accessing website data. Thus, the processes accessing "interactive network process status data" from the network are not accessing "website data" and cannot fit the Court's definition of "web browser process."

11. Google also argues that P1 and P2 in column 14 refer to physical processors, not processes.

12. In opposition, Plaintiffs point out that Dr. Kogan's argument rests on an improperly narrowed interpretation of Figure 6's embodiment, which is instead described as an "interactive network process" that ***may be used***, for example, for "online gaming."[13] FF ¶58. Therefore, the inventors expressly did not limit "interactive network process" to online gaming, and instead stated that online gaming was but one example of an interactive network process. *See e.g., Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346-47 (Fed. Cir. 2015) ("This court

[13] The specification notes in several places that "online gaming" is just an example of an interactive network process. FF ¶¶59-60.

has repeatedly 'cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.'").

13. Plaintiffs also argue Figure 6 itself refers to the broader "interactive network process" and denotes "interactive network process status data" being received from the network connection (step 620), the first process on P1 receiving the "interactive network process status data" from P2 (step 640), and that the "updated interactive network process status data" is passed back to the network via the network connection (step 660). FF ¶¶61-63. Moreover, Professor Dunsmore disagreed with Dr. Kogan's unsupported narrowing of Figure 6 and column 14, and opined that a POSITA would recognize it as disclosing two processes executing on two processors, both accessing data from the network, and therefore, disclosing a first and second web browser process. FF ¶¶48, 55, 64.

14. As to whether P1 and P2 in column 14 refer to physical processors, not processes, Plaintiffs counter that Google's interpretation contradicts the clear language of the specification as a whole. The co-inventor, Mr. Cioffi, explained that all the figures specifically refer to P1 and P2 as physical processors, but they also by definition refer to the first logical process on P1 and the second logical process on P2. FF ¶50. The Summary of the Invention never refers to physical processors, but instead repeatedly notes that an "object of the present invention" is to provide a computer system capable of executing instructions in a "first logical process" and "second logical process," and that malware "downloaded from the network and executing as part of the second logical process is incapable of initiating access to the 'first memory space'." FF ¶¶51-52. This is described in column 16, which makes clear that the functions carried out by the processors "may comprise separate, secure logical processes." FF ¶¶51-52.

15. Plaintiffs point out that the inventors specifically note that the functions of P1 120 in Figure 1 may be carried out by a first logical process, and the functions of P2 140 may be carried out by a second logical process:

> [a] computer system 100 constructed in accordance with the principles of the present invention would be capable of disallowing a secure logical process, such as the second logical process described above, access to certain memory spaces, and/or disallowing a secure logical process from initiating access to another logical process. For example, the functions carried out by P2 140 (FIG. 1) may comprise a secure logical process, which may be configured to be unable to automatically initiate access to either M1 110 or another logical process performing the functions of P1 120.

FF ¶52.

16. Plaintiffs also note that while Google admits that P1 and P2 described in column 14 refer back to elements 120 and 140 of Figure 1, Google still tries to argue that P1 and P2 refer only to physical processors. Dr. Kogan similarly agreed that computer system 100 referred to in the discussion of Figure 6 ties back to Figure 1 and the two processors, P1 and P2. FF ¶¶53-54.

17. Plaintiffs also point to the testimony of Professor Dunsmore that Figure 6 and column 14 disclose a first and second web browser process. FF ¶55.

18. Google's arguments are contradictory: Google contends the specification does not clearly disclose a first "web browser process" for purposes of the original patent rule because the specification's disclosure of a first "logical process" is not specific enough and that "logical processes" could refer to a number of different software processes besides "web browser processes." (ECF No. 292 at 19) But, when alleging *improper recapture*, Google contends that the patents' "first logical process" includes a process that "could 'access website data,'" which is the precise definition of a "web browser process." (*Id.* at 14-15) If a POSITA recognizes a "first logical process" as including a "web browser process," which is undisputed, then narrowing the claims from "logical process" to a known sub-species is clearly and unequivocally within the scope of the original invention.

19. Google's claim that Figure 6 and column 14 only relate to online gaming is a clear misreading of both. Figure 6 never mentions online gaming, but instead refers more broadly to an "interactive network process." FF ¶¶36, 61-62. The specification also makes clear that online gaming is just one example of an "interactive network process" described in Figure 6. FF ¶63.

20. Finally, Google replies that "interactive network process status data" is not "website data," and therefore Figure 6 and column 14 cannot refer to "web browser processes." But this is based on Dr. Kogan's rejected opinion that Figure 6 and column 14 are limited to online gaming, and online gaming only involves using game servers and not website data. Dr. Kogan's narrow interpretations are unsupported by the specification and rebutted by Professor Dunsmore, who testified that a POSITA would interpret an "interactive network process status data" to encompass "website data." FF ¶¶59-66.

21. On balance, Google failed to meet its burden of clear and convincing evidence that the challenged reissue claims violate the original patent rule for claiming a first "web browser process." The Court finds, among other things that:

22. While the exact term "web browser process" does not appear in the specification, Google did not present clear and convincing evidence at trial to demonstrate that a POSITA would not recognize the "web browser processes" of the reissue claims as clearly and unequivocally disclosed by the inventors.

23. In fact, the overwhelming evidence adduced at trial demonstrates that a POSITA would identify the "web browser processes" of the reissue claims as clearly and unequivocally disclosed by the inventors. *See All Dental Prodx, LLC v. Advantage Dental Prod., Inc.*, 309 F.3d 774, 779 (Fed. Cir. 2002) ("In order to comply with the written description requirement, the

specification 'need not describe the claimed subject matter in exactly the same terms as used in the claims; it must simply indicate to persons skilled in the art that as of the [filing] date the applicant had invented what is now claimed.'")

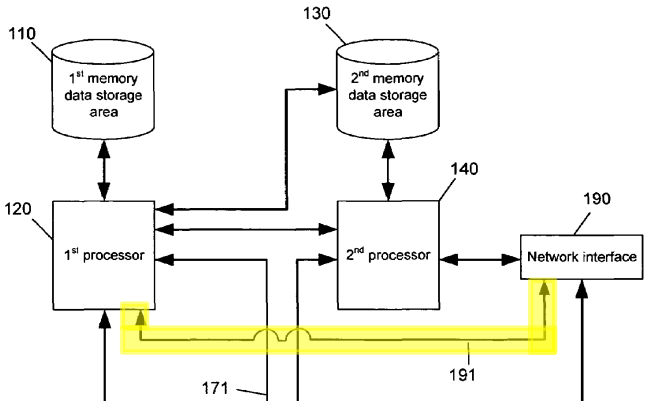
24. First, Mr. Cioffi explained that the original invention was conceived in 2004 from a severe malware attack that arose from his son's use of Internet Explorer ("IE") to play games on the Internet, and thus was always directed in part to web browsers. FF ¶¶65-66. Mr. Cioffi further explained that the specification disclosed "logical processes" and "interactive network processes" that included "web browser processes within their definition." FF ¶39.

25. Second, Google concedes that "web browser processes" are a narrower sub-species of "logical processes" described throughout the specification. FF ¶40. Google's invalidity expert, Dr. Arbaugh, called the "first logical process" the "same as the first web browser process." FF ¶¶41. Professor Dunsmore, opined that a logical process could be just about any process, including a "process working with web browsers." FF ¶42.

26. Third, Professor Dunsmore explained that column 14, lines 28 through 45 of the '247 Patent specification plainly discloses use of a first and second web browser process. FF ¶¶43-45. In particular, column 14 discloses an "interactive network process" that by its plain words contemplates a process interacting with the network. P1 and P2 exchange the interactive network status data from the network connection, and updated interactive network status is sent back to the network. FF ¶¶43-45. Professor Dunsmore explained that a POSITA reviewing column 14 would understand that P1 and P2 refer to two processes, both of which are accessing data from the Internet, and thus satisfy the Court's definition of "web browser process" (a process capable of accessing website data). FF ¶45. Professor Dunsmore also explained that

column 16 discloses to a POSITA the various types of processes that could be executed in a secure logical process, including the "functions of a web browser program." FF ¶46.

27. Fourth, Figure 1 discloses a first process P1 120 with direct access to the network interface via item 191. FF ¶68.



28. Mr. Cioffi gave unrebutted testimony that "Item 191 is a communication line from the first processor to the network interface device," and discloses that a "first process and the first processor also have access to the network interface device and the network." FF ¶69. Furthermore, column 14 of the specification discloses a first process (P1 120) and second process (P2 140) with the ability to exchange network data, as does Figure 1 which discloses a two-way communication arrow between first process (P1 120) and second process (P2 140). FF ¶¶35-36.

29. It is undisputed that a web browser process falls within the original scope of the "logical processes" disclosed throughout the specification, and thus would be recognized by a POSITA as disclosed in the original patent. FF ¶¶40-41, 47. The Court has found that the specification discloses throughout the use of "logical processes" and "logical processes" can be any number of computer program processes including "web browser processes." FF ¶71. Further, the specification discloses that "web browser processes" can be one type of "logical process." FF

¶71. Indeed, Dr. Arbaugh called a "logical process" and "web browser process" essentially the same thing. FF ¶¶41, 47.

30. Furthermore, the specification discloses "interactive network processes." FF ¶¶30-31, 36. The first process (P1 120) and second process (P2 140) in the "interactive network process" embodiment described in column 14 of the specification have access to "interactive network status data" and exchange that data between the two processes. FF ¶¶30-31, 36. "Interactive network processes" on its face would include "web browser processes" and is understood by a POSITA to include "web browser processes." FF ¶30. Professor Dunsmore explained that Figure 6 discloses using two processes capable of accessing website data (e.g. "web browser processes") to carry-out the inventors' "interactive network process" embodiment. FF ¶32.

31. The foregoing supports the Court's finding that a POSITA reviewing the specification would understand that it discloses a first process accessing website data and therefore discloses a "first web browser process" according to the Court's claim construction. FF ¶71. In contrast, Google had the opportunity but failed to offer any expert testimony at trial on the question of whether a POSITA would recognize that a "first web browser process" as disclosed in the specification (is something missing in this sentence?).

32. In summary, the Court finds that a POSITA would consider a first process capable of accessing website data (i.e., a "first web browser process") clearly and unequivocally disclosed under Section 251. *See e.g., In re Wilder*, 736 F.2d 1516, 1520 (Fed. Cir. 1984) ("It is not necessary that the claimed subject matter be described identically, but the disclosure originally filed must convey to those skilled in the art that applicant had invented the subject matter later claimed.").

2. The '247 Patent Specification Clearly Discloses the use of a Single Processor.

33. Google next argues the specification fails to disclose a single electronic data processor embodiment. As discussed below, Google fails to prove by clear and convincing evidence that the '247 specification does not clearly disclose a single processor embodiment.

34. Contrary to Google's argument, the specification is clear that the invention can be carried out using two logical processes on a "single processor." In column 16, the specification states "*the functions carried out by processors 920 and 940 may comprise separate, secure logical processes* ***executing on the same physical processor***." FF ¶¶73-75. Professor Dunsmore explained that this disclosure makes clear to a POSITA that the invention could be executed on a single processor.[14] FF 76. He also explained that the specification's teaching that "[p]rocessor 960 may further comprise multiple processor cores" signals to a POSITA that the invention may be executed on multiple processor cores, but could also be executed on a single processor. FF ¶77.

35. Google argues that Professor Dunsmore reads the specification incorrectly. Yet, Google had the opportunity but failed to offer any contrary expert testimony at trial on how and/or why a POSITA would interpret the specification differently. FF 79-81. The Court does not credit Dr. Kogan's conclusory opinion that the single processor claims are not supported by the specification as he provided no basis for his opinion. FF ¶¶80-81. *See In re Buchner*, 929 F.2d 660, 661 (Fed. Cir. 1991) ("[A]n expert's opinion on the ultimate legal issue must be supported by something more than a conclusory statement.").

[14] Google argued at claim construction that nowhere in the specification was there a disclosure of a single processor embodiment. (ECF No. 71 at 41) The Court overruled the argument as inappropriate for claim construction, noting there was nothing logically inconsistent with a single processor embodiment and the specification's "core security teachings," citing the same language identified by Professor Dunsmore. (ECF No. 71 at 52)

36. Google's counsel further argues that column 16 does not actually disclose executing both logical processes on a single physical processor but this interpretation defies logic. As noted above, the specification clearly states that the functions carried out by the two processors could instead be secure logical processes "***executing on the same physical processor***."

37. While not determinative, the Court further notes that the originally filed claims of the '247 Patent – which for written description purposes are considered a part of the original disclosure -- clearly disclose a single processor embodiment. FF ¶¶78, 84.

38. In summary, Google fails to prove by clear and convincing evidence that the single processor claims violate the original patent rule.

3. The Specification Clearly Discloses a "First Web Browser Process Passing To, Or Exchanging Website Data With A Second Web Browser Process."

39. Google next argues that the '247 specification does not disclose a first web browser process passing to or exchanging website data with a second web browser process. Google admits that it did not present any expert testimony regarding this argument at trial. (ECF 320 at 3)

40. As an initial matter, Plaintiffs assert that Google waived this argument by failing to proffer *any* evidence at trial regarding the alleged lack of disclosure of "passing," which deprived Plaintiffs of *any* opportunity to rebut Google on the issue. Google's failure deprived the Court of *any* expert testimony on the question of whether a POSITA interpreting the specification would find "passing" website data between the first and second web browser process to be clearly disclosed. Accordingly, Google waived this defense. *See Asetek Danmark A/S v. CMI USA, Inc.*, 100 F. Supp. 3d 871, 893-94 (N.D. Cal. 2015) (finding waiver of indefiniteness defense under same facts).

41. In *Asetek Danmark,* the defendant similarly failed to offer any affirmative evidence, expert or otherwise, in support of its indefiniteness defense (also a question of law with an underlying fact question on the view of a POSITA). The court found the defendant failed to prove its defense because:

> (1) CMI adduced no evidence at trial regarding indefiniteness as it pertained to the term 'substantially circular,' which is the only term it relies on in its post-trial briefing; (2) evidence from experts is necessary to help the Court assess what a person of ordinary skill in the art would know or find indefinite; and (3) CMI bears the burden of establishing invalidity due to indefiniteness. As a result, even if the Court did not find waiver, the Court would be compelled to find that CMI did not carry its burden to prove, by clear and convincing evidence, that Asetek's patents are invalid for indefiniteness.

Id. at 894.

42. Like the defendant in *Asetek*, Google adduced no evidence at trial regarding the Section 251 defense of no "passing" and therefore cannot legally satisfy its burden and the defense is waived. *Erfindergemeinschaft UroPep GbR v. Eli Lilly & Co.*, 276 F.Supp.3d 629, 653–54 (E.D. Tex. 2017) (ruling that a party's failure to raise a defense at trial waived that defense in post-trial briefing because its "silence deprived [the opposition] at trial of any opportunity to respond to that theory and develop a record in support.") (*citing Fujifilm Corp. v. Motorola Mobility LLC*, 182 F. Supp. 3d 1014, 1038 (N.D. Cal. 2016) (denying motion for judgment of invalidity as matter of law and motion for a new trial based on an obviousness theory purportedly supported by the evidence because the defendant waived that theory by not presenting it at trial); *Fractus, S.A. v. Samsung Elecs. Co.*, 876 F. Supp. 2d 802, 838 (E.D. Tex. 2012) (defendant waived affirmative defense in post-trial motion by not explicitly presenting that defense at trial, "depriv[ing] [plaintiff] of any opportunity to substantively respond with its own testimony or evidence")).

43. Moreover, assuming Google did not waive this defense, substantial evidence establishes that "passing" is adequately disclosed under the original patent rule. As discussed above, column 14 discloses passing "interactive network process status data" from the network between P1 and P2. FF ¶¶90, 100. "Interactive network processes" on its face would include "web browser processes" and is understood by a POSITA to include "web browser processes" because both are capable of accessing website data. FF ¶¶89, 96, 100. "Interactive network process data" exchanged between P1 and P2 would include website data. FF ¶¶91-92, 99-100. Finally, Figure 1 discloses a first process (P1 120) and second process (P2 140) with two-way communication arrows between each other which further supports the exchange of data between the first and second web browser processes. FF ¶¶94, 100.

44. In summary, Google waived this defense. Moreover, even if the Court did not find waiver, Google failed to meet its burden of clear and convincing evidence that the specification does not disclose a first web browser process passing to or exchanging website data with a second web browser process.

4. The Specification Clearly Discloses a "First Web Browser Process Initializing A Second Web Browser Process."

45. Google's last argument related to the original patent rule is that the specification does not disclose the "first web browser process initializing a second web browser process" of Claim 49. Google admits that it did not present any expert testimony regarding this argument at trial. (ECF No. 320 at 3-4)

46. Plaintiffs assert that Google waived this argument by failing to proffer *any* evidence regarding this alleged lack of disclosure. Like the passing argument above, because Google did not adduce any evidence on whether a POSITA would interpret the specification as disclosing this limitation, Google waived the defense. FF 110; *See Asetek Danmark A/S v. CMI*

USA, Inc., 100 F. Supp. 3d 871, 893-94 (N.D. Cal. 2015) (finding waiver of indefiniteness defense).

47. Moreover, substantial evidence supports finding a "first web browser process initializing a second web browser process" clearly disclosed in the specification. The specification, in the figures and multiple places throughout the body, discloses that P1 is capable of opening and/or initializing the processes on P2. FF ¶¶103-107, 110. For example, Figure 2 of the '247 Patent describes P1 instructing P2 to initiate a "protected process" and open a process window (step 220). FF ¶¶104, 110. The specification's description of Figure 2 notes the "1st processor 120 instruct[ing] 2nd processor 140 to initiate the protected process and open one or more process windows." FF ¶¶105, 110. The specification further explains that the protected process may be "browsing the internet." FF ¶¶105, 110. In another embodiment, the specification discloses "P1 120 instruct[ing] processor P2 140 to initiate a protected process and open a process window." FF ¶¶106-107, 110. The specification further discloses a user opening a web browser program, followed by P1 instructing P2 to open one or more protected process windows for web browsing. FF ¶¶105-107, 110.

48. To counter these disclosures, Google argues that reference to P1 is limited to a physical processor and therefore P1 cannot be viewed as a web browser process, but as discussed above, column 16 makes clear that functions carried out by processor P1 and processor P2 can also carried out by, and referred to as, "logical processes." FF ¶¶49-52. Google concedes that a web browser process is just a type of logical process. FF ¶33.

49. In summary, Google waived this defense. Moreover, even if the Court did not find waiver, Google failed to meet its burden of clear and convincing evidence that the specification does not disclose the "first web browser process initializing a second web browser process."

B. GOOGLE FAILED TO PROVE THAT CLAIMS 67 AND 43 VIOLATE THE RULE AGAINST RECAPTURE WITH CLEAR AND CONVINCING EVIDENCE.

1. Claim 67 and Claim 43 are Directed Toward Overlooked Aspects of the Original '247 Patent.

50. Google raises three arguments why the challenged reissue claims were not directed towards overlooked aspects of the original '247 Patent claims. None are persuasive.

a) A First and Second "Web Browser Processes" Were Not Originally Claimed.

51. The original '247 Patent claimed first and second "logical processes" where the reissue patents claim first and second "web browser processes." Citing *Hester Industries*, Google first argues that the original filed-for claims of the '247 Patent were broad enough to encompass "web browser processes" and therefore "web browser processes" must have been "claimed." (ECF 292 at 13-14 (citing *Hester Industries, Inc. v. Stein, Inc*., 142 F.3d 1472, 1483 (Fed. Cir. 2012)). Google cites *Hester Industries* for the proposition that if the new embodiments were "potentially" covered by the originally filed patent claims, they cannot be considered "overlooked." *Id.* at 10. In *Hester Industries*, the embodiments claimed to have been overlooked were *explicitly* recited in the original filed patent claims and thus could not be considered "overlooked." 142 F.3d at 1483.

52. *Hester* is not applicable. Originally-filed claim 1 discloses a first logical process with access only to the first memory space and second memory space. FF ¶¶114-115. Google points to Professor Dunsmore's testimony that if the original claims of the '247 Patent are read broadly enough, they may not necessarily exclude a first web browser process with access to website data, however, claims cannot be construed in a vacuum (i.e., reference to the intrinsic

record is necessary).[15] FF ¶128. Google's own experts and the Court have already interpreted the original '247 Patent as excluding the very embodiment Google claims is covered by the original claims. FF ¶¶116-119.

53. Moreover, the Court previously ruled that "the essence of the invention claimed in the '247 Patent was isolation—only the second logical process could access the network; the rest of the system could not." (ECF No. 212 at 8) Google's expert, Dr. Arbaugh, confirmed it was his opinion that the original '247 Patent required a second processor to isolate the computer system from the network. FF ¶117. Google's expert, Dr. Kogan, opined that the reissue patents disclosed a different invention from the original '247 Patent, but inconsistently couched his opinion as applying only for the original patent rule, not for recapture. FF ¶118. Finally, Google conceded under the original patent rule in its Rule 50(a) motion for JMOL that "the invention disclosed in the reissue patents is entirely different from the one disclosed in the original '247 Patent …. [The] first logical process ran on the first processor and a second logical process ran on the second processor, and only the second process … was a network-interface program or browser." FF 120 (ECF No. 251 at 5-6)

54. In summary, Google has failed to prove by clear and convincing evidence that a first and second "web browse process" was not originally claimed by the '247 Patent. Google's argument that "web browser processes" were "claimed" in the original patent cannot overcome the intrinsic record and its own admissions and is not supported by the caselaw upon which it relies. The Court find that a first and second "web browser process" was not originally claimed by the '247 Patent, and *Hester* is therefore inapplicable.

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[15] *See David Netzer Consulting Eng'r LLC v. Shell Oil Co.*, 824 F.3d 989, 993 (Fed. Cir. 2016) (claims are construed with reference to the intrinsic record).

b) The Patent Discloses Two "Web Browser Processes."

55. Google next argues that there is no embodiment in the specification with "two web browsers." This argument is the same as Google's previously considered argument that the specification fails to disclose a first "web browser process" in violation of the original patent rule. *See supra*, FF ¶71, Conclusions of Law Section ("CL") 9-33.

56. For the same reasons discussed above, the Court finds that Google has failed to prove by clear and convincing evidence that a POSITA would not recognize the specification clearly discloses a first and second "web browser process" embodiment. The Court further finds that a POSITA would recognize the specification clearly discloses a first and second "web browser process" embodiment. *See* CL¶¶32-33.

c) The Reissue Claims Are Patentably Distinct.

57. Google's final argument is that narrowing from first "logical process" to first "web browser process" is not patentably distinct because changing "logical" to "web browser" is too minor given that a "first web browser process" is a type of logical process. (ECF No. 292 at 16) Google had the opportunity but failed to offer evidence at trial to establish that claims 67 and 43 were obvious (i.e. not patentably distinct) over the original claims despite the Court's statement that such evidence was necessary for the Court to rule on overlooked aspects. FF ¶121, 134 (ECF No. 212 at 9-10) The only evidence presented at trial as to whether claims 67 and 43 are patentably distinct over the original '247 Patent claims was the intrinsic record and prosecution of the reissue patents. FF ¶¶122-126. The inventors originally filed for reissue claiming "browser processes." FF ¶123. The examiner rejected the reissue claims as anticipated and obvious in light of Narin because it disclosed an isolated first process and un-isolated second process executing on a single processor. FF ¶124. The inventors argued that their first "browser

process" was distinct from Narin because it was not isolated like Narin's first process. FF ¶124. The examiner responded that the claims did not specify the first process as a "web" process capable of accessing website data. FF ¶125. In response, the inventors added "web" to specify the reissue claims were directed to "web browser processes" and that the first web browser process was capable of accessing website data. FF ¶125. In response, the examiner withdrew his rejections and allowed the claims. FF ¶126. Because the examiner is assumed to be a POSITA, or at a minimum informs how a POSITA would interpret the claims, the withdrawal of the obviousness rejection in response to narrowing to "web browser process" is direct and persuasive evidence that the challenged reissue claims are non-obvious (i.e. patentably distinct) over the original '247 Patent claims. *See e.g., Syneron Med. Ltd. v. Viora Ltd.*, No. 2:14-cv-639, 2015 WL 1952360, at *17 (E.D. Tex. Apr. 10, 2015) ("[S]tatements by the examiner can inform how a person of ordinary skill in the art would interpret the claims.") (citing *Salazar v. Procter & Gamble Co*., 414 F.3d 1342, 1347 (Fed. Cir. 2005)); *Wi-Lan USA, Inc. v. Alcatel-Lucent USA, Inc.*, No. 12-23568-CIV, 2013 WL 4811233, at *18 (S.D. Fla. Sept. 9, 2013) ("Patent examiners are presumed to be persons of ordinary skill in the art in the relevant technical field."); *Zest IP Holdings, LLC v. Implant Direct Mfg., LLC*, No. 10CV0541-LAB, 2012 WL 1721255, at *9 (S.D. Cal. May 16, 2012).

58. Plaintiffs' facts are similar to *B.E. Meyers & Co. v. U.S.*, 47 Fed. Cl. 200, 207 (2000), cited in MPEP § 1412.02(I)(B)(1) as a favorable example of seeking reissue on "overlooked aspects." In *Meyers*, the Court of Federal Claims permitted the complete removal of a limitation that was added to obtain the patent, where the replacement limitation provided a separate invention. There, the patented invention pertained to night vision devices while the original patent application had only claims that included a pulsing Light Emitting Diode (LED).

The reissue application sought claims that did not include the pulsing LED. The Court found that the reissued claims were to an independent invention that used a light source funneled through a lens system, which had nothing to do with any type of pulsing circuitry. *See* MPEP §1412.01(II).

59. Here, the '247 Patent claims are directed towards a different invention than the challenged reissue claims. FF ¶134. The '247 Patent claims are directed toward isolation where only the second process could access the network and the rest of the system could not. FF ¶¶128-131. The challenged reissue claims are different than the '247 Patent claims because they no longer claim an isolated first process. FF ¶¶128-131. Indeed, Google and its experts have admitted on several occasions that the invention disclosed in the '247 Patent claims is materially different than the invention disclosed in the challenged reissue claims. FF ¶128-131. Like *B.E. Meyers*, the inventors' new reissue claims disclosed new embodiments patentably distinct from the original '247 Patent.

60. It is also noteworthy that the inventor's amendment of the challenged reissue claims to first and second "web browser processes" was the key amendment to transverse the prior art and gain allowance. FF ¶133-134. Google had the opportunity but failed to offer evidence on the question of whether the challenged reissue claims are obvious in light of the original '247 Patent claims. FF ¶133-134.

61. In summary, Google has failed to prove by clear and convincing evidence that the challenged reissue claims are obvious in light of the original '247 Patent claims.

2. Claims 43 and 67 Were Materially Narrowed To Avoid Substantial Recapture of the Surrendered Subject Matter.

62. In addition to the Court's findings that claims 43 and 67 are directed towards "overlooked aspects" of the '247 Patent, and thus not triggering the rule against recapture, Google also failed to prove by clear and convincing evidence that challenged claims violated the

rule against recapture because Google failed to prove the third step in the recapture analysis was met.

a) Step Three of the Recapture Test Focuses on Whether the Claims Were "Materially Narrowed In Other Respects" so as to Avoid Recapture.

63. The third step of the recapture analysis is to "determine whether the reissue claims were materially narrowed in other respects, so that the claims may not have been enlarged, and hence avoid the recapture rule." *N. Am. Container, Inc. v. Plastipak Packaging, Inc*., 415 F.3d 1335, 1349 (Fed. Cir. 2005). The narrowing of the claims "must relate to the surrendered subject matter to prevent the recapture rule from applying." *In re Youman*, 679 F.3d 1335; *see also In re Mostafazadeh*, 643 F.3d 1353, 1361 (Fed. Cir. 2011) ("[T]he narrowing must relate to the subject matter surrendered during the original prosecution (i.e., the applicant cannot recapture the full scope of what was surrendered)."); *N. Am. Container,* 415 F.3d at 1350 (applying recapture rule bar because the narrowing of claims did not relate to the surrendered subject matter).

64. It is undisputed that the reissue claims have been narrowed from first and second logical processes to first and second "web browser processes." Google argues that the narrowing does not relate to the surrendered subject matter and thus the recapture rule is violated." Conversely, Plaintiffs contend that narrowing to two "web browser processes" was directly related to the surrendered subject matter. As discussed below, the Court agrees with Plaintiffs, and finds that Google has failed to prove by clear and convincing evidence that the challenged claims violate the rule against recapture.

b) The Patent Office Raised Corthell Against the '247 Patent and in Response the Inventors Amended Their Isolated/ Non-Isolated Claims to Add a Second Processor.

65. During the prosecution of the original '247 Patent, the examiner rejected the original claims, citing Corthell as disclosing every limitation. FF ¶136. In response, the inventors amended the original claims, adding a "second electronic data processor" to provide physical isolation between the first and second logical processes. FF ¶136. The inventors explained why the pending claims were no longer anticipated by Corthell:

> As per claim 1, Examiner believes that Corthell discloses the Applicant's claimed invention. … While Corthell does teach partitioning of the memory space into a primary partition (Figure 2, [block 204]) and a protected partition (Figure 2, [block 206]), ***he does not teach or suggest the partitioning of "secure" and "unsecure" instruction execution onto separate electronic data processors.***
>
> In stark contrast, Applicants teach the use of a multi-processor computer having at least a first and second electronic data processor capable of executing instructions using a common operating system. . . . Such a configuration allows for a physical hardware separation or partitioning of instruction execution on physically separate processors (or processor cores), in contrast to Corthell's teaching of executing all instructions on a single electronic data processor. ***By physically separating the executing the execution of trusted instructions*** (the operating system running on the first electronic data processor, for example) ***from untrusted network process instructions*** (a Java script downloaded for the internet, for example), a higher level of security may be achieved.

FF ¶136. To distinguish Corthell's isolated process and open (or non-isolated) process executing on the same processor the inventors added the second processor limitation which added physical isolation of the first logical process. FF ¶136.

c) The Inventors Pursue Reissue Claims.

66. As Mr. Cioffi testified at trial, the intent of the new reissue claims was to pursue unclaimed embodiments disclosed in the original '247 specification. FF ¶137. In particular, the inventors claimed "browser processes" where the first process was no longer isolated from the network. FF ¶137. The inventors also dropped use of a second electronic data processor for a number of the reissue claims. FF ¶37. Professor Dunsmore explained that the inventors were able

to drop the second electronic data processor because it was used to isolate the first logical process from the network, and distinguish Corthell. FF ¶138. But because the first logical process was now a "browser process" with access to the network (i.e. un-isolated), there was no longer a need for physical isolation from the network by the second electronic data processor. FF ¶138. Stated differently, the second processor was added in prosecution to distinguish Corthell by adding physical isolation for the first process from the network, but when the first process was given access to the network in the reissue claims, the need for physical isolation and thus the second processor was removed. In Professor Dunsmore's reasoned opinion, the material narrowing from two logical processes, one isolated and one un-isolated, to two "web browser processes," both un-isolated, was directly related to a single processor embodiment because a second processor was no longer needed to physically isolate the first process from the network. FF ¶¶144, 148.

67. In the first office action, the PTO raised rejections under recapture and anticipation. FF ¶139. The PTO noted that applicants had "removed the limitation that the 'second logical process executing on the second electronic data processor is' capable of exchanging data across a network of one more computers" and that "the reissue claims were not materially narrowed in other respects, and therefore recapture exists." FF ¶139. The examiner also rejected all the reissue claims as anticipated under the "van der Made" reference but did not re-raise Corthell as prior art. FF ¶139. The inventors explained why there was no recapture and why "van der Made" did not anticipate. FF ¶140. The PTO withdrew its rejection, finding the inventors' arguments "persuasive," but raised a new anticipatory reference, Narin, against all the reissue claims. FF ¶140.

68. The inventors attempted to traverse Narin, explaining that Narin's "closed process" was not the same "first browser process" found in the reissue patents because Narin's closed process did not have access to the network. FF ¶141. The examiner acknowledged the inventors' argument that their "first browser process is a web process," but noted the claims did not specify the "claimed browsers are actually web browsers." FF ¶141. In response to this second rejection the inventors narrowed the term "browser process" to "web browser process" and specified that the "first browser process" is "capable of accessing data of a website via the network." FF ¶142. The reissue claims were subsequently allowed. FF ¶142.

d) Claiming Web Browser Processes Materially Narrowed the Reissue Claims, and the Narrowing Was Related to the Surrendered Subject Matter.

69. Professor Dunsmore explained to the jury that by claiming "web browser processes" in the reissue claims instead of the original "logical processes," the inventors materially narrowed the reissue claims because they now excluded all types of processes other than "web browser processes." FF ¶¶143, 152. Mr. Cioffi testified that narrowing to web browser processes in reissue was a material narrowing directly related to reclaiming the use of a single processor. FF ¶143 n.12. Professor Dunsmore also explained that this narrowing was directly related to the surrendered subject matter—a single processor embodiment where the first logical process was isolated from the network, but the second logical process was not. FF ¶144. As the Court previously recognized, the invention claimed in the '247 Patent was "isolation" where "the second logical process could access the network [but] the rest of the system could not." FF ¶¶145, 152 (ECF No. 212 at 8) When the inventors amended the '247 Patent's original claims over Corthell, they added a second electronic processor to provide physical isolation between the first and second logical processes. FF ¶¶146, 152. In adding the second physical processor during prosecution of the '247 Patent, the inventors surrendered the isolation embodiment using a single

processor. FF ¶¶146, 152. Professor Dunsmore explained that when the inventors later narrowed the reissue claims to web browser processes, the first process was no longer isolated because web browser processes must be capable of accessing website data. FF ¶¶147, 152. Accordingly, because the inventors were no longer claiming isolation of the first logical process from the network, reintroducing single processor claims was not improper recapture because the inventors' narrowing was directly related to the surrendered subject matter. FF ¶¶148, 152.

70. Google's argument that the inventors surrendered the single processor embodiment over Corthell ignores the fact that the invention was originally directed to operating on a single processor claiming a first logical process isolated from the network. FF ¶¶149-151. Accordingly, when the inventors surrendered their single processor embodiment, it was with respect to the isolation embodiment of the invention where the first logical process was isolated from the network.[16] FF ¶¶149-151. The reissue claims are directed toward a first logical process without isolation (i.e., a "web browser process), and therefore do not violate the rule against recapture. In summary, the Court finds Google failed to prove by clear and convincing evidence that the challenged claims violate the rule against recapture under 35 U.S.C. § 251.

III. CONCLUSION.

For the forgoing reasons, the Court finds that Google failed to prove by clear and convincing evidence its 35 U.S.C. § 251 invalidity defenses.

Dated: April 30, 2018

Respectfully submitted,

By: */s/ Eric W. Benisek*
Eric W. Benisek

[16] Dr. Kogan did not challenge Professor Dunsmore's evidence or reasoning regarding the third step of recapture except to declare in conclusory fashion that narrowing the reissue claims to "web browser processes" was "not related" to using one or two processors.

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). As such, this response was served on all counsel who are deemed to have consented to electronic service. Local Rule CV-5(a)(3)(V). Pursuant to Fed. R. Civ. P. 5(d) and Local Rule CV-5(d) and (e), all other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of the foregoing by email, on this the 30th day April, 2018.

/s/ Eric W. Benisek
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